An Investigation
INTO THE
PATHOLOGY OF PERNICIOUS ANÆMIA.

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INTRODUCTORY.

I PROPOSE in this paper to record the results of a series of investigations which I have recently made with the object of throwing light on the pathology of the disease variously termed *progressive pernicious* or *pernicious* anæmia. My investigations have been of a twofold nature—partly clinical, partly pathological. It is with the latter that I propose here specially to deal. My observations have had reference to the question how far we must believe in the existence of this form of anæmia as a special disease.

What is *pernicious* anæmia? Is it a special disease with features clinical and pathological peculiar to itself, or does it differ from other forms of anæmia merely in its intensity? Are we to hold with the view at first expressed by Quincke, and since held by many, that the disease may originate in many ways and be the product of very various morbid processes—loss of blood, continuous discharges, insufficient nourishment all being possible factors in its development provided they are of sufficient intensity and duration? Or are we to hold with the later view of the same observer, that while pernicious anæmia may have a *clinical*, it has no *pathological*, existence; that while forms of the disease found associated with definite organic disease, such as malignant disease, are to be regarded as *secondary*, others in which no such definite morbid changes can be found may be regarded as *primary*, while a third series are to be considered as *intermediate* in their nature? The difficulty attending the answer to be given to these questions may be gauged by the fact that within the past few weeks so able an authority as Dr. Bristowe[1] has confessed it to be "impossible at the present time to make any trustworthy distinction between the chlorosis of young girls and pernicious anæmia, except such as depend on the age and sex of the patient and on the effects of treatment," even while, at the same time, he expresses his belief in the existence of some fundamental difference between the two conditions.

It has been the object of my investigations to learn, with special reference to pernicious anæmia, whether any, and if so what, fundamental difference exists between this and other recognised forms of anæmia. Much of the confusion which still prevails regarding the title of this form of anæmia to be considered even *clinically* a special disease is undoubtedly to be ascribed to the vague use of the terms *progressive* and *pernicious* unfortunately applied to the disease in the first instance by Biermer. These terms have been constantly used by observers to designate conditions of anæmia having little or nothing in common. The assumption has been that the term *pernicious* is applicable to every condition of anæmia sufficiently profound, irrespective of its true nature, especially if it terminates fatally. *Pathologically*, much of the obscurity regarding the true nature of pernicious anæmia as distinguished from other forms of anæmia is similarly to be ascribed to the vague use of the term *anæmia* itself. The term is constantly used as almost synonymous with *pallor*, and is hence used to designate the most diverse conditions of the blood, the assumption being that the changes in the blood on which pallor may depend are the same in kind in all cases, however much they may vary in their degree in individual cases. Both these assumptions I find to be groundless. I have adduced evidence elsewhere[2] to show that clinically there is good reason for believing in the existence of a form of anæmia essentially *pernicious* in its nature distinguishable even during life from the other forms of anæmia. In the present paper I propose to complete the consideration of the subject by showing what the pathological features are which determine this difference, and in what respect it is to be regarded as also a pathological entity.

[1] Brit. Med. Jour., vol. i. 1888, p. 1149.
[2] "Is Pernicious Anæmia a Special Disease?" Practitioner, Aug. 1888.

PATHOLOGICAL.

My pathological observations have been of a twofold nature—partly *anatomical*, partly *experimental*. I have sought to learn, in the first instance, what anatomical changes are to be constantly found associated with this form of anæmia; and then I have endeavoured in various ways to produce similar changes in animals experimentally. The results of these observations may therefore be conveniently discussed under two headings—anatomical and experimental. I shall first describe the various anatomical changes found in this disease, and discuss their relative importance; and then I shall show what light I have been able to throw on the true nature of this disease by means of experiments.

I. ANATOMICAL.

The anatomical changes found in this disease are as various as they are numerous. A consideration of them at first sight seems little fitted to throw much light on the true pathology of the disease. I find that they may with convenience be divided into three groups:—1. Those *occasionally* found associated with the clinical features of pernicious anæmia, including especially malignant disease and various gastro-intestinal lesions. 2. Those which may with justice be regarded as the result of the anæmia, including especially pallor and fatty degeneration in various organs of the body. 3. Those found in the blood itself or in those organs concerned either in blood formation or blood destruction.

1. *Various anatomical changes occasionally found associated with pernicious anæmia.*—The possibility of all the features which we have come to regard as more or less characteristic of pernicious anæmia being in certain cases apparently the result of well-marked organic disease, such as cancer, is a fact which has to be borne in mind and explained at the very outset of any inquiry into the pathology of this disease. It is this association, of the existence of which there cannot be a doubt, which is relied upon by those who hold that pernicious anæmia is not a special disease, but is merely a profound form of ordinary anæmia differing from others in its intensity. It is largely from this association that pernicious anæmia is often regarded merely as a symptomatic condition.

Malignant disease.—Of the existence of the clinical features of pernicious anæmia in association with malignant disease, especially cancer, there cannot be a doubt. At the same time, the frequency of this association has been probably over-estimated, mainly owing to the indiscriminate use of the term *pernicious* to designate any anæmia sufficiently profound, irrespective of its true nature. Apart from these more doubtful cases, however, a sufficient number of cases have been recorded by competent observers to prove conclusively that all the characteristic features of pernicious anæmia may be presented by patients the subjects of malignant disease. The question to determine is: What is the nature of this connexion? Is it accidental or essential? That malignant disease is not usually characterised by the clinical features of this variety of anæmia is certain. Hence, when the two are found in association, the question arises: Have the features, or association of features, which constitute clinically the disease we term pernicious anæmia been stamped on those proper to malignant disease without further anatomical morbid change than that constituted by the malignant disease itself? Or have anatomical changes special to, and characteristic of, pernicious anæmia been added to those already and independently existing? It is interesting to note that most of the cases of the nature recorded have been cases of malignant disease of the stomach. Nevertheless, there is no doubt that cases of malignant disease of this organ are constantly met with, running their course to the fatal termination without presenting any changes in the blood or any clinical features other than those which usually mark ordinary wasting diseases. It is equally without doubt that all the features of pernicious anæmia in their fullest intensity may be presented by cases in which no definite organic changes, whether of malignant or of other nature, are to be found. Hence the conclusion seems justifiable that when the two conditions—malignant disease and pernicious anæmia—are found associated, the connexion is to be regarded, if not precisely as accidental, at least as not essential; that the malignant disease does not constitute the essential anatomical change underlying the pernicious anæmia associated with it, however much in certain situations it may favour the development of those changes. It is only on such a

view of the nature of the connexion between malignant disease and pernicious anæmia that we can explain why malignant disease, especially in the stomach, is not more usually found associated with the features of pernicious anæmia, and it is only on this view that such a case as that recorded by Eisenlohr[3] can be explained, in which the ordinary symptoms of malignant disease of the stomach had existed for over two years and then *suddenly* took on those of pernicious anæmia. The natural view to take of such a case is that to the malignant disease already existing there had more or less suddenly been superadded those anatomical changes characteristic of pernicious anæmia. Such is the conclusion we must arrive at, unless, with Dr. Coupland,[4] we are prepared to recognise two forms of pernicious anæmia: one *symptomatic*, exemplified by cases such as the above, in which definite organic disease is found; the other *idiopathic*, exemplified by cases in which all such changes are absent. Even if we accept such a classification, the difficulty still remains to discover what the anatomical changes are which underlie the idiopathic variety of the disease; for, however obscure they may be, such changes must exist to account for a condition of the blood such as that met with in pernicious anæmia. It is more reasonable to suppose that the same anatomical changes underlie the features of pernicious anæmia in all cases alike, than to suppose that in one case the anæmia is the result of the malignant disease, while in another the same features, perhaps intensified, are to be found altogether apart from recognisable anatomical changes of any sort.

Gastro-intestinal lesions.—In the case of another group of anatomical changes it is not so easy to decide what the precise connexion between them and the anæmia is. I refer to the very various gastro-intestinal lesions so frequently met with in patients dying of this disease. The frequency with which gastro-intestinal changes have been found appears at first sight to lend colour to the view held by many—that pernicious anæmia cannot be regarded as a special disease, but is merely the outcome of a disturbance of nutrition such as is met with in no other disease. In addition to cancer of the stomach, to which reference has already been made, these gastro-intestinal changes include atrophy of the mucous membrane of the stomach, and especially of the gastric glands; cirrhotic contraction of the stomach, with disappearance of the gastric glands; interstitial inflammation of the gastric mucosa, with partial or total atrophy of the gastric glands; ulcers of the stomach and duodenum; duodenitis; degenerative changes in the sympathetic ganglia of the abdomen; and similar changes in the nerves of Meissner's and Auerbach's plexuses in the intestinal wall; and lastly, in this connexion, the presence of intestinal worms. Here, as in the case of malignant disease, the question to determine is how far these lesions are to be regarded as the essential morbid anatomical changes underlying the anæmia sometimes associated with them. In the first place, it is to be remembered that it is only in a comparatively few cases that even these changes have been found. As the essential morbid change, therefore, in this disease, they cannot possibly be regarded. What importance is to be attached to them in those cases in which they are present? To obtain an answer to this question, it is necessary to consider the various changes individually.

It will be noted how frequently *changes in the gastric mucosa*—thickening, interstitial inflammation, and atrophy of the gastric glands—have been described. To this point particular attention has been drawn by Dr. Fenwick.[5] What significance is to be attached especially to this condition of atrophy of the gastric glands? The answer to the question is, I think, best supplied by the observations of Dr. Fenwick himself. He states that "he was struck with the frequency with which atrophy of the gastric glands presented itself in those dying of cancer." Thus, of fifteen cases of cancer of the breast, in only four were no anatomical changes to be found in the gastric mucosa. Some degree of atrophy was found in every case of cancer of the stomach. If atrophy of the gastric glands is to be regarded as the essential anatomical change in pernicious anæmia, it would seem reasonable to expect that pernicious anæmia should be found frequently associated with cancer of the breast, and almost invariably with cancer of the stomach. Curiously enough, however, I have not found a single case recorded in which cancer of the breast has presented the features of pernicious anæmia; and as regards cancer of the stomach, it is the exception and not the rule for it to be marked by the clinical features characteristic of pernicious anæmia. In this case, therefore, as in the case of malignant disease, I am compelled to conclude that, however important atrophy of the gastric glands and other changes in the gastric mucosa may be as etiological factors—and what part they probably play we shall afterwards have occasion to refer to,—they cannot be regarded as the essential anatomical lesions underlying this form of anæmia, even in those cases in which they are found present.

The same holds true of the *degenerative changes in the nervous apparatus* of the intestinal wall and of the abdomen described, amongst others, by Sasaki[6] and Banti,[7] and regarded by these observers as independent lesions and as the cause of the anæmia. The view which naturally suggests itself, that these changes may possibly be as much the result as the cause of the anæmia, is fully supported by the observations of Scheimpflug[8] made with special reference to these observations of Sasaki. In opposition to Sasaki, Scheimpflug finds that in a large number of cases the nervous structures of the intestinal wall present changes which may be regarded as the result of inflammatory, degenerative, or other pathological processes. He made a number of observations on the appearances presented by the plexuses of Auerbach and Meissner in various conditions. The result was to show that in many various conditions these plexuses were to be found more or less fattily degenerated. As regards the general frequency of pathological changes in the nervous structures of the intestinal wall, he finds that such changes are by no means uncommon, and that not only in wasting diseases, but also in certain acute infectious diseases, changes in the nervous apparatus of the intestinal wall—cloudiness, swelling, atrophy, fatty degeneration, &c.—are by no means unfrequent in their occurrence. In the face of these observations, I think it is impossible for us to agree with Sasaki in regarding these degenerative changes as absolutely independent lesions, and as the essential morbid anatomical condition underlying the disease.

The only other gastro-intestinal condition I shall notice at present is the *presence of intestinal worms*, the connexion between which and anæmia, similar in its nature to pernicious anæmia, has recently excited much interest and attention both in this country and on the Continent. The anæmia of the workers in the St. Gothard Tunnel presented apparently all the features of true pernicious anæmia, and was found to be due to the presence of the Anchylostoma duodenale, sometimes in large numbers, in the intestinal tract; it usually disappeared rapidly on their removal, More recently a number of cases have been recorded by Reyher and Runeberg, in which the connexion between anæmia of this kind and the presence of Bothriocephalus latus has been apparently equally close and equally marked. In neither case has the nature of the relation between the condition of anæmia and the presence of the worms been altogether satisfactorily explained. In the anæmia associated with the Anchylostoma duodenale the condition has been ascribed, probably in great part with some truth, to the loss of blood occasioned by the presence of the parasite. This explanation cannot, however, apply to all cases. On such a view, we are unable to explain why in certain cases recorded[9] the anæmia was by no means proportionate to the number of worms present, and why in others it is almost absent altogether, when large numbers of the eggs of Anchylostoma are to be found in the stools.[10] Hence, the *rôle* played by the worms in producing the anæmia is by no means so simple a one as the above view would indicate. As Sahli clearly shows, the degree of anæmia is certainly not dependent solely on the number of worms present; nor yet on the disturbances in digestion occasioned by their presence, since in the first instance digestive disturbances may be entirely absent. In the case of the Bothriocephalus latus, it is not even pretended that the anæmia is occasioned by any loss of blood. Some pathological factor other than the presence of worms must be here at work. Runeberg's observations[11] clearly show that not only may worms be present sometimes in considerable number, unassociated with any of the features of pernicious anæmia; but that—and this fact is still more im-

[3] Deutsch. Archiv f. klin. Med., Bd. xx., 1877, p. 499.
[4] Gulstonian Lectures, THE LANCET, vol. i. 1881, p. 571.
[5] THE LANCET, vol. ii. 1877, pp. 1, 39, 77.
[6] Virch. Archiv, Bd. xcvi., p. 287.
[7] Jahresber. u. d. ges. Med., Bd. ii., 1881, p. 239.
[8] Zeitschrift f. klin. Med., Bd. ix., 1885, p. 58.
[9] Sahli: Deutsch Archiv f. klin. Med., Bd. xxxii., 1883, p. 422.
[10] Ibid., p. 428.
[11] Deutsch. Archiv f. klin. Med., 1888.

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portant—even in Finland, where this parasite abounds, cases of pernicious anæmia are met with in patients not infested by the parasite, and that these cases prove especially intractable. This observation agrees with our experience of the disease in this country, where of its constant occurrence, independent altogether of the presence of worms, there cannot be a doubt.

The conclusion is therefore forced upon us that none of the conditions just considered, whether malignant disease or other gastro-intestinal lesions, can be regarded as the essential anatomical change even in the few cases in which they are present, or as fitted in any way to account for the peculiar features of this as distinguished from other forms of anæmia. With regard to them all, the same statement may be made—viz., that in all of them it is necessary to assume that there have been superadded certain anatomical changes essential to pernicious anæmia, and on which the features of pernicious anæmia depend. This conclusion is based chiefly on two considerations: (1) that similar anatomical changes, sometimes even more marked, are constantly to be met with in cases presenting none of the features of pernicious anæmia; and (2) that cases of pernicious anæmia are constantly met with in which no such gross anatomical changes are to be found.

2. *Anatomical changes the result of the anæmia.*—These include, in addition to the *pallor* so generally observed in the various organs of the body, notably the heart and kidneys, the *fatty degeneration* so frequently met with in varying degree in certain tissues of the body, more especially the heart muscle, the liver, kidneys, and smaller arteries and capillaries. They include also the *extravasations* met with, especially in the retina and elsewhere. Fatty degeneration of the heart is a condition so often met with that it has been regarded by various observers, amongst others by so great an authority as Dr. Wilks, as the chief pathological lesion to be found in this disease. Pernicious anæmia, according to this view, is made up of an ordinary anæmia intensified by the occurrence of this change in the heart. There is no doubt that more or less marked fatty degeneration of the heart muscle is found in the great majority of cases of pernicious anæmia. Thus Dr. Coupland found that, out of seventy-six cases recorded, in no fewer than sixty-four this condition of the heart was expressly stated to have been present; in six no mention was made of it, and in six the heart was described as healthy. Apart altogether from the likelihood—so strong as, in my opinion, to amount to certainty—that this change in the heart is the result of the anæmia, it is clear that its absence in certain cases of apparently undoubted pernicious anæmia must suffice to exclude any essential importance being attached to it. And this conclusion is further strengthened by the fact that fatty degeneration of the heart is met with in many other conditions of disease, and has been described as occurring to a very marked degree in a case of anæmia the result of metrorrhagia.[12]

The result of our considerations so far, therefore, points to the conclusion that pernicious anæmia cannot, like the anæmia of phthisis or other organic disease, be regarded as *symptomatic* in the ordinary sense of that term; and that even in cases in which it is found along with definite organic disease, such as malignant disease, or definite morbid anatomical changes, such as atrophy of the gastric glands, all the features of the disease cannot be explained solely by reference to these changes. The essential morbid changes must therefore be sought for in the blood itself, or in those organs concerned either in blood formation or blood destruction.

3. *Changes in the blood.*—These I shall only briefly refer to, as I have already discussed them more in detail elsewhere. They affect both the number and variety of the coloured corpuscles of the blood, as also their richness in hæmoglobin.

As regards the *corpuscles*, the changes are of a threefold nature: 1. An extraordinary diminution in their number—an *oligocythæmia* far more marked than that ever met with in ordinary forms of anæmia, sometimes more marked even than that resulting from loss of blood. This marked oligocythæmia is not unfrequently found apart altogether from loss of blood. 2. An extraordinary variation in form and size of the red elements of the blood, aptly described by Quincke under the comprehensive term *poikilocytosis*. These changes are common to all forms of anæmia, provided they are of sufficient intensity. They express merely the degree of anæmia existing, not in any way its nature. I find especially that they are common to pernicious anæmia and the anæmia the result of loss of blood, and hence they cannot be regarded as in any way peculiar to the blood in pernicious anæmia. 3. The presence of small coloured elements not usually found in the blood—the so-called "microcytes" or "Eichhorst's corpuscles," which have from time to time been regarded as pathognomonic of the disease. These small bodies are remarkable in three respects: (*a*) their small size, their diameter in many cases not exceeding the fourth part of that of a normal red corpuscle; (*b*) their perfectly spherical form, resembling in this respect minute red corpuscles; and (*c*) their uniform deep yellow colour, resembling sometimes in this respect droplets of oil rather than elements of the blood. By their uniform spherical shape and depth of colour they are distinguishable, in my opinion, from the various other coloured microcytes so constantly seen in the blood in various conditions of profound anæmia, especially that due to the loss of blood. These present usually the most various shapes—drawn out, pointed, oval, &c.; and their depth of colour varies for the most part according to their size, in no case, however, exceeding that of the surrounding red corpuscles. These "yellow spherical microcytes" are to be found in the blood in the great majority of cases of pernicious anæmia, but not constantly. They vary much in number in different cases, and even in the same case at different times. They may disappear from the blood for a time altogether, to appear later on in greater number perhaps than before. They have been variously regarded as stages in the development of young red corpuscles, or as products of blood destruction. They have been considered as pathognomonic of pernicious anæmia;[13] and, on the other hand, they have been described by at least two observers[14] as occurring in other forms of anæmia and in some other conditions.[15] Whatever view may be held as to their nature or pathognomonic value, there can be no doubt that the presence of these bodies constitutes a marked feature of the blood in many cases of pernicious anæmia.

Some of the other changes occasionally met with in the blood may here be briefly referred to. The presence of *nucleated red corpuscles* in the blood cannot be regarded as peculiar to pernicious anæmia. It is only in a few cases[16] that they have been described. In no case were they ever found by Quincke[17] in his many observations. On the other hand, Ehrlich[18] has found them in the blood in all varieties of severe anæmia; and Neumann[19] found them in the blood in a fatal case of anæmia the result of long-standing and profuse metrorrhagia.

As regards the *colourless elements of the blood*, the great majority of observations agree in showing that there is no absolute increase in the number of white corpuscles in this disease; and there is usually no increase in the number of granular elements and blood-plates in striking contrast, therefore, with the condition of the blood in many forms of wasting disease, such as phthisis, in which there is usually a very considerable increase in the number of these elements.

As regards the *richness of the blood in hæmoglobin*, one extremely interesting fact is to be noted—viz., that the percentage diminution in hæmoglobin is by no means proportionate to the percentage diminution in the number of corpuscles. Thus, Quincke states, as the result of his numerous observations, that, while the corpuscles were reduced on an average to 10 or 12 per cent. of their original number, the hæmoglobin percentage was only reduced to from 20 to 40 per cent. Some of Dr. Coupland's observations[20] entirely agree with these; and this condition of the blood I have noted in most of the cases which have come under my notice. The condition is precisely the reverse of that found in chlorosis, where the poverty in hæmoglobin is far greater than can be accounted for by any fall in the number of corpuscles. To this condition of the blood I am inclined to attach no little value, both clinically and pathologically. Its full significance will be afterwards seen. In connexion with the relative richness of the blood in hæmoglobin there may be noted, further, (1) the readiness with

[12] Neumann: Zeitschrift f. klin. Med., Bd. iii., 1881, p. 414.

[13] Eichhorst: Centralbl. f. d. med. Wiss, 1876, p. 466.

[14] Litten: Berl. klin. Woch., 1877, No. 1; and Lepine, Union Méd., 1877, No. 114.

[15] Afanassiew: D. Archiv f. klin. Med., Bd. xxxv., 1884, p. 223.

[16] Litten: Berl. klin. Woch., 1880, p. 695.

[17] D. Archiv f. klin. Med., Bd. xxv., p. 577.

[18] Berl. klin. Woch., 1880, p. 466.

[19] Zeitschr. f. klin. Med., Bd. iii., 1881, p. 414.

[20] THE LANCET, vol. i. 1881, p. 571.

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which, in this condition, the colouring matter of the corpuscles separates itself from the stroma, and diffuses out or becomes collected toward one part of the corpuscle;[21] (2) the readiness with which crystals of hæmoglobin may be obtained from the blood;[22] and (3) the extraordinary richness of the individual corpuscles in hæmoglobin, even in cases (as in one recently under my notice) in which the diminution in their number is excessive—an observation which I have repeatedly had occasion to make.

These, then, are the anatomical changes found in the blood in this disease. It will be noted that, unless perhaps in degree, scarcely one of them, with the single exception of the relative richness in hæmoglobin, can be regarded as peculiar to pernicious anæmia. As regards the other changes—the oligocythæmia, poikilocytosis, presence of yellow microcytes, the occasional presence of nucleated red corpuscles, the absence of increase in the number of white corpuscles, or of the colourless granular elements of the blood—they are neither absolutely constant nor peculiar. It is only when they all exist in a certain degree and in a certain association that they can be regarded as sufficiently distinctive to constitute the form of anæmia we term *par excellence* pernicious. This point, however, I have discussed in detail elsewhere.

Changes in the Blood-forming and Blood-destroying Organs.

The changes in the blood are nevertheless the most marked and the most constant anatomical changes to be found in cases of pernicious anæmia. One naturally turns, therefore, to the organs concerned either in blood formation or blood destruction, since it must be on some disorder of one or other of these two great processes that the condition of the blood depends. It is in these organs that we must look for the characteristic anatomical changes underlying the disease. These changes I shall first consider *seriatim* in connexion with the various organs in which they are found—viz., the liver, spleen, bone marrow, and lymphatic glands.

Changes in the Bone Marrow.—In the red bone marrow the changes found are both macroscopic and microscopic. The increase in the quantity of the red marrow at the expense of the yellow marrow of the shafts of the long bones, as well as the striking change in its appearance—its peculiar rosy-red or violet-red colour in the great majority of cases,—has long directed attention to this as the possible seat of important changes in this disease. The microscopic changes associated with this change in the appearance of the bone marrow are of a twofold nature—the presence of large numbers of nucleated red corpuscles apparently pointing to some profound disorder of hæmogenesis (blood formation); the presence of large numbers of corpuscle-carrying cells, cells enclosing old red corpuscles or their pigment remains, apparently pointing to some disorder of hæmolysis (blood destruction). When first described, both of these changes were thought to be peculiar to pernicious anæmia. Both have since been shown to be common to pernicious anæmia and other forms of severe anæmia. As regards the former, *nucleated red corpuscles* are undoubtedly to be found in the bone marrow in large numbers in the great majority of cases of pernicious anæmia. Their presence, however, is neither constant nor peculiar. On the one hand, they have been described as absent altogether in certain cases; or, in others, as only few in number. In a well-marked case of this disease, which I have recently examined, nucleated red corpuscles were exceedingly few in number, and had to be sought for. On the other hand, they have been found in the bone marrow in other conditions, especially in cases of anæmia the result of severe and long-lasting hæmorrhages, as in the case of metrorrhagia described by Neumann.[23] Similar changes in the bone marrow have been produced experimentally in dogs by Litten and Orth,[24] and by Bizzozero and Salvioli,[25] by repeatedly withdrawing blood from these animals, and thus bringing about a condition of severe anæmia. The presence of nucleated red corpuscles cannot therefore be regarded as a change essentially peculiar to this disease; still less does it serve to explain the characteristic clinical features usually presented by this form of anæmia. The same remark applies to the *corpuscle-carrying cells*. First regarded as pointing to some excessive destruction of red corpuscles peculiar to the disease, they were soon shown to be common to this and many other conditions. Thus Osler, in observations on seventy-five cases of disease other than pernicious anæmia, found these bodies so frequently that he could not connect their presence specially with any one disease. They were especially numerous in phthisis, pneumonia, typhoid, and ulcerative endocarditis. My own observations entirely confirm those of Osler. On the one hand, I have found that their presence in any excess is not a constant feature of pernicious anæmia. Thus, in one case in an elderly man I found them extraordinarily numerous, individual cells containing as many as ten or twelve old red corpuscles; while in another in a young man they were exceedingly few in number. On the other hand, I have found them very numerous in many other conditions, especially those of wasting disease occurring in elderly people. In connexion with these changes in the bone marrow, it may be noted, as my observations have shown, that in most cases the nucleated red corpuscles present a high degree of colouration—this appearance therefore indicating a great richness of the corpuscles in hæmoglobin, similar to that already described as occurring in the red corpuscles of the blood. Further, that in most cases, as determined by micro-chemical reagents, such as sulphide of ammonium, the bone-marrow tissue contains a considerable excess of iron, partly in diffuse, partly in granular form. This excess, however, is not constant, nor is the reaction of iron given by the tissue at all proportionate to the amount of granular pigment or number of effete red corpuscles it sometimes contains.

Changes in the Lymph Glands.—Few or no changes have been described in connexion with the lymphatic glands. The absence of any enlargement or other marked change enabled Biermer in the first instance to distinguish at once this form of anæmia from leucocythæmia, and this observation has been confirmed by all subsequent observers. One case is described by Eichhorst[26] in which the mesenteric glands presented some appearance of redness and swelling. Another is described by Weigert[27] in which, along with dilatation of the lymphatics of the neck, and of the mesenteric, portal, omental, and retro-peritoneal lymphatics, there was also some swelling of the mesenteric glands, their sinuses being filled with lymph containing many red corpuscles. This case Weigert was inclined to regard as one of supplementary blood formation on the part of the glands; but it stands alone, and any great value cannot therefore be attached to it. In Eichhorst's case the microscopical changes were not noted; and as regards the importance to be attached to the appearance of redness and swelling, it is only necessary to state that precisely similar changes were found by Neumann in the case of anæmia the result of severe metrorrhagia already referred to. In this case, with the exception of a very few nucleated red corpuscles, no changes were found microscopically.

Changes in the Spleen.—As regards the spleen, the changes hitherto described have, as in the case of the bone marrow, been partly macroscopic, partly microscopic. The changes, however, have by no means been so constant or so marked as in the case of the bone marrow. In a certain number of cases the spleen has been found enlarged, the enlargement being even recognisable during life.[28] Thus, in a case recorded by Dickinson, it weighed "at a guess" 10 oz. In two cases described by Dr. Finlay it weighed 19½ oz and 16 oz. In three cases, for the opportunity of examining which I am indebted to the great kindness of my friend, Dr. Byrom Bramwell, the spleen is noted as weighing 19 oz., 11 oz., and 10 oz. respectively; and in another case, on which I made a necropsy recently for Mr. Wherry of Cambridge, the spleen weighed 13 oz. In all these cases, therefore, the enlargement has been very marked. But these only constitute a very small proportion of the cases recorded. In the great majority of cases the spleen is either described as normal, or no mention is made of its condition at all. Thus in a case of Dr. Stephen Mackenzie's,[29] it is described as "of natural size"; "not enlarged," as in a case of Dr. Carrington's;[30] weighing only 4 oz., as in another case;[31] or only 3½ oz., as in a case of Dr. Smith's.[32] Its other naked-eye characters have equally varied. It has been found soft and diffluent;[33] pale and soft;[34] and

[21] Mackern and Davy: THE LANCET, vol. i. 1877, p. 642.
[22] Copeman: St. Thomas's Hospital Reports, 1887.
[23] Op. cit. [24] Berl. klin. Woch., 1877, No. 51.
[25] Centralbl. f. d. Med. Wiss., 1879.

[26] Die progressive perniciöse Anæmie. Leipsig, 1878, p. 288.
[27] Virch. Archiv, Bd. lxxix., 1880, p. 387.
[28] Bristowe: Brit. Med. Jour., vol. i. 1888, p. 1140.
[29] THE LANCET, vol. i. 1878, p. 12. [30] Ibid., vol. i. 1883, p. 102.
[31] Dr. Finlay: Brit. Med. Jour., vol. ii. 1885, p. 864.
[32] THE LANCET, vol. ii. 1881, p. 133.
[33] Dickinson: Brit. Med. Jour., vol. i. 1878, p. 531
[34] Coupland: THE LANCET, 1881, p. 569.

soft;[35] and, on the other hand, firm and red, or firm in consistence and of deep purple colour. In a case which recently came under my notice the spleen weighed 13 oz., was soft and pulpy in consistence, and presented an extremely deep violet or purplish colour, contrasting in this respect very markedly with the pallor presented by all the other organs of the body. Microscopically, no changes at all have been described in the great majority of cases. In a few cases a few nucleated red corpuscles have been found. Micro-chemically, the spleen has been found in certain cases to contain a considerable amount of pigment rich in iron; not, however, in any great excess.[36] In seven cases of pernicious anæmia which I have now had the opportunity of examining, the amount of iron contained in the spleen, as determined by micro-chemical examination, has in no case been in excess of that met with in certain other conditions. In none, for example, has it been more marked than in several cases of cirrhotic Bright's disease; and in three cases the spleen gave no micro-chemical reaction of iron at all—less even than that usually met with in normal conditions.

The changes in the bone marrow, lymphatic glands, or spleen—the chief seats of *blood formation* in the body—are thus neither sufficiently constant nor sufficiently distinctive to be regarded as the essential morbid anatomical changes in this disease. These must, therefore, be sought for in the organs concerned in the other great process of the blood—namely, *blood destruction*.

(To be continued)

Clinical Observations
ON CASES OF
PERNICIOUS ANÆMIA, DILATED STOMACH, AND MELANO-SARCOSIS.

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Pernicious anæmia.—G. D——, a man aged thirty-two, a saddler, was admitted into the Queen's Hospital on Feb. 2nd last, complaining of pain in the epigastrium, relieved by food, and of pain in the head, with throbbing at the back of the head. His father died from cancer; his mother died from syncope following an accident. Two brothers and four sisters are alive and well, and no member of his family has suffered from anæmia. The patient had always been steady, and was never ill in his life until his present illness came on. He dates his illness from August, 1886. Just before this time his father died, and he had great grief and anxiety, and was also overworked, having to do his own and his father's work. He states that he gradually became pale, and that with the pallor the pains in the head grew worse. He had had epistaxis, but no vomiting or spitting of blood, and no black stools.

When admitted, it was found that he was well nourished, but intensely anæmic. The stomach was exceedingly irritable, and he was unable to take solid food. He frequently complained of nausea and sinking at the stomach, and often vomited. The heart could not be ascertained to be enlarged. Well-marked hæmic murmurs were heard at the apex, and also at the base in the pulmonary area. A continuous venous hum was heard in the veins at the root of the neck. The pulse was 120, very compressible, and small. An ophthalmoscopic examination revealed copious flame-shaped hæmorrhages in the retina. He was treated with arseniate of soda and dialysed iron by the mouth, and hypodermic injections of liquor arsenicalis. On Feb. 25th he had epistaxis, and vomited once or twice. He was also very restless at night. The blood was found to be pale, and the red corpuscles were very irregular in shape (poikilocytosis) and size. Many of the corpuscles were pear shaped; some had a tail-like process, some were shaped like a ring, and some like a dumb-bell. The white corpuscles were granular and broken up, and diminished in number. With Gowers' hæmacytometer an average of only ten red corpuscles on two squares could be counted (the normal number being 100). On March 8th the patient suffered from vomiting and epistaxis; the blood corpuscles, estimated with the hæmacytometer, showed an increase in number, there being an average of fourteen in two squares. On March 10th vomiting and epistaxis again occurred, and this was repeated on the 11th, the patient becoming profoundly exhausted and too feeble to speak, though quite conscious. The patient died comatose on the 12th, respiration being very laboured. During the time the patient was under observation there was moderate but pronounced pyrexia. The urine was throughout free from albumen.

Necropsy.—The body was fairly nourished—certainly not emaciated. The skin was quite pale and waxy looking, there being no trace of hypostasis anywhere. The lungs were extremely pale, but otherwise healthy. On opening the pericardium, about three ounces of straw-coloured fluid were seen. Under the visceral layer of the pericardium on the heart's surface there were two or three small hæmorrhages. The heart was extremely pale, and its cavities were empty, only a few drops of blood being obtainable, and that resembled pink-coloured water. The liver was large, pale, and fatty, weighing 74 oz. The spleen weighed 6 oz., and was pale and pliable. The kidneys were quite pale, but otherwise healthy. The stomach was dilated and very anæmic. Dr. Hogben made a microscopical examination of the viscera. The heart muscle was pale and granular, and in parts the transverse striation of the fibres had disappeared. The capillaries of both kidneys were engorged, and the epithelium in the convoluted tubules was cloudy. The supra-renal bodies were healthy. The cancellous portion of the upper extremity of the left femur was examined. Sections were cut after softening in picric acid. There appeared to be an excess of fine connective tissue and fat cells in the cancellous spaces and some extravasated blood. Unfortunately a portion of the stomach was not kept for examination.

There can be no doubt that this case was one of pernicious anæmia. The following features distinguished the case from one of ordinary or symptomatic anæmia. (1) The excessive degree of the anæmia and the absence of any evident cause except mental anxiety, which has often preceded the onset of pernicious anæmia. 2. The inefficiency of remedies which quickly relieve ordinary anæmia. 3. The presence of fever without any localised inflammation. 4. The occurrence of hæmorrhage into the retinæ. 5. The great diminution in the number of the red corpuscles, and their altered shapes (poikilocytosis). 6. The prominence of gastric disturbance, evidenced by repeated nausea and vomiting, with pain after food. 7. The absence of any emaciation; this was noticeable, the patient being even somewhat *embonpoint*. The occurrence of retinal hæmorrhages in a case of anæmia is always an indication of great diminution in the percentage of red corpuscles, and, though perhaps not always limited to cases of pernicious anæmia, is highly suggestive of this complaint. Dr. Byrom Bramwell recommended the use of arsenic in this disease in 1877, and this drug has undoubtedly succeeded in curing some cases, but it is not a specific, and in the above case entirely failed, though given hypodermically as well as by the mouth, and in a gradually increased dose. Iron also entirely failed. It is very remarkable how cases are met with in groups. At the present time I have under my care at the Queen's Hospital a woman suffering from pernicious anæmia; a child with severe anæmia, there being retinal hæmorrhages and epistaxis, with very great diminution of the red corpuscles; and a man suffering from leucocythæmia. A girl of twelve was admitted a week ago suffering from profound anæmia, who died a day or two after admission. In all these cases iron and arsenic have been thoroughly tried without any evident benefit, and I am now treating the two cases of pernicious anæmia and the case of leucocythæmia with inhalations of oxygen.

Dilated stomach.—B. C——, a puddler aged forty, came to the hospital complaining of pain in the stomach and vomiting. The patient has not been addicted to alcohol, but, owing to the nature of his work and the consequent thirst, he has for years been in the habit of drinking copious quantities of ginger beer and of barley and oatmeal water. About twelve months ago he had pain and a sense of heaviness in his stomach after taking food. He soon began to vomit after his meals. The vomit was sour and liquid,

[35] Carrington, op. cit.; Bradbury, Brit. Med. Jour., 1876.
[36] Quincke, Deutsch. Archiv f. klin. Med., Bd. xxvii., p. 199; Peters, ibid., Bd. xxxii., p. 182.

and he said that on standing it "frothed like beer." He suffered also from excessive flatulence and constipation. This condition had lasted till the time of his admission. On admission, it was found that the patient was a well-developed man, and that he had not lost much flesh, though he had been vomiting off and on for nine months. On palpation of the stomach a well-marked succussion splash could be elicited with ease, and fluctuation elicited a thrill which could be felt right across the abdomen. The stomach was very large, extending for two inches below the umbilicus. The vomit contained sarcinæ. The patient was fed with nutrient enemata, the stomach was washed out daily with a solution of sulphite of soda (a drachm to the pint), and a mixture containing strychnia and sulpho-carbolate of soda was given by the mouth. No vomiting occurred after the commencement of this treatment, and in a few days he was allowed a small quantity of peptonised milk. After a month's stay in the hospital he was discharged quite free from all his previous symptoms, and able to digest solid food. His stomach was still enlarged, but was much smaller than it was on admission. The patient was directed to avoid taking much fluid, and to take food in small quantities and at regular intervals.

Melano-sarcosis.—M. M——, a woman aged twenty-seven, was admitted into the Queen's Hospital complaining of a swelling on the left eye. There was no family history of disease obtainable. A pigmented growth protruded through the eyelids on the left side and perforated the cornea. The patient complained of severe pain in the left eye and of gradually increasing debility. The sight of the left eye was destroyed. All over the surface of the body numerous pigmented nodules could be seen; they were hard, painless, and varying in size, but most of them were about the size of a split pea. The liver was much enlarged and nodulated, but there was no jaundice or ascites. Cachexia and debility, which had been present at the time of her admission, gradually increased, and numerous fresh nodules appeared in the skin, the patient dying exhausted a few weeks after admission.

Necropsy.—The superficial veins of the thorax and abdomen were large; a great number of small subcutaneous pigmented nodules were found scattered all over the body. On reflecting the scalp, numerous subcutaneous nodules were seen, dark blue in colour. The brain was normal. The left optic nerve was atrophied. The peritoneum was covered with nodules, both pigmented and unpigmented. The mesenteric glands were enlarged. The liver was studded with new growths, and weighed 7 lb. 10 oz. The growths were deeply pigmented in some parts, and in others were of a pale bright yellow colour. Pigmented nodules were seen on the posterior wall of the uterus, in the supra-renal capsules, in the pancreas, and in the glands. The lungs and mediastinal glands were also studded with pigmented nodules. There were numerous subpericardial nodules deeply pigmented, and many subendocardial nodules in both ventricles. The heart was very small, and weighed only 6 oz. Microscopically the growths were found to consist of spindle cells, many of which were pigmented. The growth in the eye originated from the pigment layer of the retina.

The extreme malignancy of the disease in this case was remarkable, the rapid growth of the nodules in the liver and rapid reproduction of the disease in various parts of the body being very noticeable.

METROPOLITAN DOG STATISTICS.—From the Metropolitan dog statistics for August, it appears that the number of persons known to have been bitten by dogs during the month was one hundred and fifty, including four constables. Twenty-four mad or ferocious dogs were killed in the streets by the police, and five by private persons. Four other dogs were certified as suffering from rabies, and ten from epilepsy, whilst the number of stray animals taken to the Dogs' Home at Battersea was no less than twelve hundred and ninety six.

A WINDFALL FOR GLASGOW ROYAL INFIRMARY.—A copy of the will of Mrs. Margaret McAra, who died recently at Georgetown, British Guiana, has just been received in Glasgow, bequeathing a considerable sum to that institution. The testatrix was the widow of a druggist, and under her will the estate is to be realised as soon as possible. After payment of some minor legacies, it is estimated there will be a residue of upwards of £20,000 to be handed over to the infirmary.

ON THE

RELATION OF WEIGHT TO HEIGHT AND THE RATE OF GROWTH IN MAN.

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THERE is a large field of medical observation which has been but imperfectly cultivated—namely, the correlation of physique and disease. The height, weight, and chest girth are rarely given in clinical records; yet one might reasonably expect that they would form interesting and important data. Had we the means of scientifically comparing the relation of weight to height, and of drawing conclusions therefrom, such data would be as frequently supplied as is now the daily temperature. The subject is one of special importance during the period of active growth of the body; but physicians rarely make use of the scales and measure because they do not know how to deduce from the data any opinion more trustworthy than what can be formed from general impressions that experience has taught, but which cannot be expressed. The subject enters into the question of life insurance, into the working of the Factory Acts, and in the selection of candidates for the various services; but even in these the questions are left to the judgment and experience of the medical officer, and are not determined by definite rules which would render the results scientifically useful. The age, height, and weight of a patient can with little trouble be recorded; but how are we from such data to determine his relative rank in the standard of physique? Height and weight alone will not suffice; for persons of the same height vary in weight according to age, and persons of the same age vary greatly in stature. How, then, can the relative weight be determined? We know the mean height and weight at the various ages for the whole population and for the different classes of society; but these means or averages do not help us in cases where the persons are above or below the average. Various methods have been proposed to determine the weight which corresponds to each inch of height, but these take no note of the fact that for the same height the weight varies with the age. What is required is a table of standard weight for each inch in height at the respective years of age. This has yet to be compiled, and the question is as to how it can be done. Having frequently felt the want of some reliable means of judging of the physical development of children and of adults, I was led to examine the large series of statistics collected by the Anthropological Committee of the British Association and those of Professor Bowditch for America. The results of this investigation are now offered as a contribution to our knowledge of the laws which govern the physical development of the body, and as a means of bringing the subject practically within the scope of clinical observation. One reason why the subject has hitherto attracted so little attention is that we have no method of readily comparing the results of observation. The ever-varying data of height and weight alone convey no definite idea to the mind, and the purely scientific spirit is, in general, too weak to furnish data without some apparent and immediate practical result.

I. A TYPICAL STANDARD OF HEIGHT AND WEIGHT.

In this investigation the factors which we have to deal with are age, height, weight, and chest girth. The latter in the present paper will be left out. The first step must be to obtain a typical standard. Stature is largely dependent upon race, but in the same race there is always a wide range of height, dependent upon hereditary and social conditions. To obtain a typical standard for a race, it is necessary to include observations of persons under all the varying conditions, and as widely scattered as possible. The disturbing influences are in this way made to neutralise each other. By combining the British statistics with those of the American born, we obtain a more trustworthy standard for investigation than by taking either of them separately. This has been done, and the resulting averages given in Table I. may be at present accepted as the best available standard for the English-speaking races. As the American statistics employed do not extend beyond the eighteenth year, this special inquiry has not been carried further on the lines first employed; and as the observations for the years

below five are too few to yield reliable results, they have been left out.

TABLE I.—*Averages of Height and Weight of Boys and Girls of English-speaking Races. Calculated from the Totals of British and American Statistics.*

Boys.					Girls.				
Age.	Height in inches.	Gain in height.	Weight in pounds.	Gain in weight.	Age.	Height in inches.	Gain in height.	Weight in pounds.	Gain in weight.
5	41·30	—	40·49	—	5	41·05	—	39·63	—
6	43·88	2·58	44·79	4·30	6	42·99	1·94	42·84	3·21
7	45·86	1·98	49·39	4·60	7	44·98	1·99	47·08	4·24
8	47·41	1·55	54·41	5·02	8	47·09	2·11	52·12	5·04
9	49·69	2·28	59·82	5·41	9	49·05	1·96	56·28	4·16
10	51·76	2·07	66·40	6·58	10	51·19	2·14	62·17	5·89
11	53·47	1·71	71·09	4·69	11	53·26	2·07	68·47	6·30
12	55·05	1·58	76·81	5·72	12	55.77	2·51	77·35	8·88
13	57·06	2·01	83·72	6·91	13	57·96	2·19	87·82	10·47
14	59·60	2·54	93·46	9·74	14	59·87	1·91	97·56	9·74
15	62·27	2·67	104·90	11·44	15	61·01	1·14	105·44	7·88
16	64·66	2·39	120·00	15·10	16	61·67	·66	112·36	6·92
17	66·20	1·54	129·19	9·19	17	62·22	·55	115·21	2·85
18	66·81	·61	134·97	5·78	18	62·19	—	116·43	1·22

II. THE RATE OF GROWTH IN CHILDREN.

Table I. furnishes us with the means of studying an important question which it is necessary to understand before proceeding further in the investigation—namely, the rate of growth up to the eighteenth year. The general results have frequently been given by previous writers; but, from the mode in which they have been presented, the general conception of the subject is still very indefinite, and lacks the precision which may be obtained from further examination. The table supplies the data, but a more accurate conception is derived by projecting them in graphic form, as has been done in the charts. The curves represent the annual increase in weight in boys and girls. (See Charts I. and II.) A glance shows that, whilst the curves for the sexes are similar in character, they differ in a marked manner in the periods. They show the same maxima and minima, but these occur at different years in each. In both there is great activity during the first two years of life, but the rate falls rapidly and is at a minimum during the third and fourth years. After certain variations it again increases, and attains a second maximum. Here the marked difference of the sexes is seen. The year of most active growth in boys is sixteen, in girls thirteen. Thereafter the curve again falls to a minimum in both at eighteen. Another well-marked feature is the dip which occurs in boys at eleven and in girls at nine, preceded in both by a slight rise. It is worthy of note that the ratio of nine and eleven is the same as thirteen to sixteen—that is, in the proportion of four to five; a fact which may point to a law of difference between the sexes which may have a much wider application.

An important question has to be considered. Are these changes fixed and determined, or do the variations in the activity of growth, with which all are familiar, occur at irregular and uncertain periods? To determine this point the two series of statistics—British and American—were examined separately, and the results are represented in the charts by the faint lines. The close accordance of the curves in their periods and amounts is sufficient to prove that the variations in the activity of growth are determined in time by a fixed law as definite as other steps in the process of development. The two main features of this law are (1) that about the ninth year in girls and the eleventh in boys there is a period of depression in the activity of growth, when they appear not to thrive so well as at other times; and (2) that in the thirteenth year in girls and

CHART I.—*Annual Increase in Weight in Boys.*

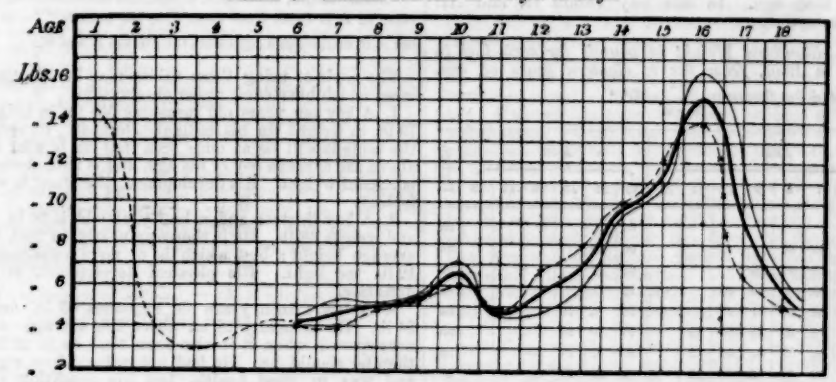
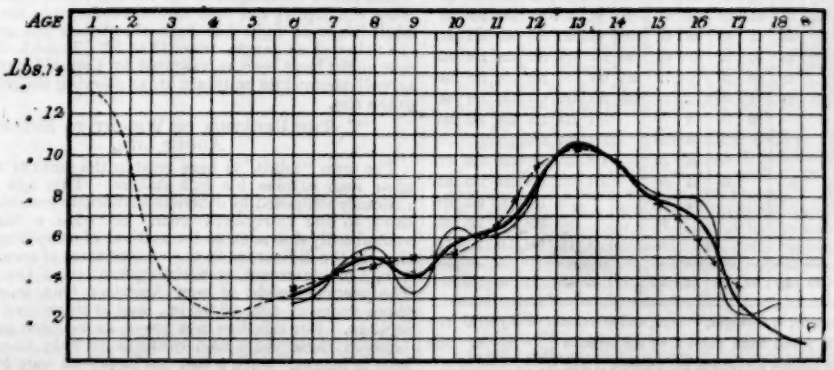


CHART II.—*Annual Increase in Weight in Girls.*



Faint line, British statistics. Star and line, American statistics. Dark line, average of totals.
Before six years, statistics unreliable.

the sixteenth in boys growth is at its maximum, and that thereafter it again falls, more gradually in girls than in boys, to a minimum in the eighteenth and nineteenth years. These facts have important clinical bearings, the consideration of which must be at present deferred; but it may here be remarked that they show the importance of all statistics for these ages being kept for each year, and not in quinquennial or decennial periods, and that boys should not be compared with girls of the same age, but at the ages corresponding with the same phase in the curves.

III. THE RELATION OF WEIGHT TO HEIGHT DURING ADOLESCENCE.

Having obtained a typical standard of height and weight for each year of age up to eighteen, the next question is, Can we deduce therefrom any rule regarding the relation of these factors one to the other? Stature increases steadily with age, but not at a uniform rate. The weight also increases with age, but not uniformly or in arithmetical proportion to the height. The ratio of weight to height—i.e., the weight of each inch—increases with age, so that whilst between five and six years the weight of the inch is 1 lb., at eighteen it is 2 lb. After various workings and often-repeated trials the analyses of the table yielded the following law:—*Between five and eighteen years, inclusive, the weight varies directly as the height squared, and inversely as the amount by what the age falls short of a certain number that can be readily ascertained.* Let H represent height, W weight, n age, and m the ascertained number. The formula is, $\frac{H_2}{m-n}=W$. As the rate of growth is not uniform, but follows the curve given above, the value of m is not constant. It can, however, be readily found for each year from the typical standard, by the formula $\frac{H_2}{W}=m-n$. By this means we obtain for each year a coefficient whereby we can calculate the typical weight for any height of a person at that age. In this way Tables II. and III. have been compiled.

TABLE II.—*Standard Weight in pounds for each inch in Height in Boys, from five to eighteen years of age. Calculated by formula* $\frac{H^2}{m-n}=W$.*

Inches.	Age.								Age.						Inches.
	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
40	37	37							64						50
41	39	39	40	41					66	68					51
42	41	41	42	43	43				69	71					52
43	43	43	44	45	45	46			72	73					53
44	45	45	46	47	47	48			74	76	78				54
45	47	47	48	49	49	50	50		77	79	81				55
46		49	50	51	51	52	52		80	82	84	89			56
47		51	52	53	53	55	55		83	85	87	92			57
48		53	54	56	56	57	57	59	86	88	91	96	99		58
49			57	58	58	60	60	61	89	91	94	99	102	106	59
50			59	61	61	62	62	64	92	94	97	103	106	109	60
51				63	63	65	65	66	95	98	100	106	109	113	61
52				66	66	67	67	69	98	101	104	109	113	116	62
53				68	68	70	70	72	101	104	107	113	116	120	63
54				71	71	72	72	74	105	107	110	117	120	124	64
55					73	75	75	77		111	114	120	124	128	65
56						78	78	80		114	117	124	128	132	66
57						81	81	83		118	121	128	132	136	67
58						84	84	86		121	125	132	136	140	68
59							87	89			128	136	140	144	69
60								92			132	140	144	148	70
61								95			136	144	148	152	71
$m=$	48	49	49	49	50	50	51	51	52	52	52	51	51	51	

* Let H = height, W = weight, n = age, and m = standard of years. The value of m is found from Table I. by the formula $\frac{H^2}{W}=m-n$. The bar — in each column represents the average H and W.

TABLE III.—*Standard Weight in pounds for each inch in Height in Girls, from five to eighteen years of age. Calculated by formula* $\frac{H^2}{m-n}=W$.*

H. in inches.	Age.							Age.							H. in inches.
	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
38	33							57							48
39	35	35	35					60							49
40	37	37	37					62							50
41	39	39	39	40				65	68						51
42	41	41	41	42	42			67	71						52
43	43	43	43	44	44	44		70	74	78					53
44	45	45	45	46	46	46		73	76	81	83				54
45	47	47	47	48	48	48		75	79	84	86				55
46		49	49	50	50	50	51	78	82	87	89	92			56
47		51	51	52	52	52	53	81	85	90	92	95	98		57
48			53	54	54	54	56	84	88	93	96	99	102	102	58
49			55	57	57	57	58	87	91	96	99	102	105	105	59
50				59	59	59	61	90	94	100	102	105	109	109	60
51				62	62	62	63		97	103	106	109	112	112	61
52				64	64	64	66		101	106	109	113	116	116	62
53					66	66	68		104	110	113	116	120	120	63
54					69	69	71		107	113	117	120	124	124	64
55						72	73			117	120	124	128	128	65
56						74	76			121	124	128	132	132	66
57						77	79				128	132	136	136	67
58							82					136	140	140	68
$m=$	48	49	50	50	51	52	52	52	51	50	50	50	50	51	

* Let H = height, W = weight, n = age, and m = standard of years. The value of m is found from Table I. by the formula $\frac{H^2}{W}=m-n$. The bar — in each column represents the average H and W.

The mode of using these tables may be illustrated from cases which have come under observation.

1. A boy ten years old measures 53½ in. in height and is 73 lb. in weight (in his ordinary clothes). By reference to the table it will be at once seen that he is 2 in. in height above the average boy of his age, and is 2 lb. above the proportional weight. His development, therefore, is very satisfactory.

2. A boy thirteen and a half years old is 56 in. in height and weighs 68 lb. He is therefore nearly an inch below the average height; but, which is of more importance, he is 12 lb. too light. His physical development is therefore defective.

3. A boy fifteen years old measures 65 in. and weighs 94 lb. He is nearly 2½ in. above the average—a point of consequence when it is also seen that he is 20 lb. lighter than he should be. He had not suffered from any disease, and was in good health, but his condition called for special care.

The above investigation has been left as originally made. Since the inquiry has been carried further into the period of adult life some light has been thrown on the reason why the value of m ranges from 48 to 52. Though the factor $m-n$ might have been represented by a simple number, it is as well meanwhile to retain it, as showing the relationship to the age.

IV. THE RELATION OF WEIGHT TO HEIGHT IN ADULT LIFE.

The term "adult" is here used in the sense of the period after man attains his full stature. This age has been variously computed by different authorities from the twenty-third to the thirty-fifth year. So wide a variation is undoubtedly due more to the method of compiling statistics than to the differences in the various races of men. It is, in fact, a misstatement or misinterpretation of the statistics. The average height of men (American born) is, at twenty-three years of age, 68·01 in., and at thirty-five years it is 68·47 in. But this does not prove, as has been stated, that between these years men continue to gain nearly half an inch in height. Such a fact can be proved only by observa-

tions on the same individuals, and the difference can be accounted for otherwise. Fortunately, in the present investigation, we are not concerned in the exact determination of the point. For all practical purposes the full stature may be regarded as complete at the age of twenty; any increase thereafter is but fractional and rare. After this age, however, gain in weight continues. Unfortunately the statistics that have been collected, though large, have been tabulated in a manner that renders it impossible to ascertain the rate of growth per year in the same manner as during adolescence. Were we, moreover, in possession of data sufficiently extensive for each year, it would still be doubtful whether they would yield trustworthy results, so great are the differences of constitutional tendencies to increase in weight as age advances. By a different method, however, we can obtain the means whereby we may readily judge of the relation of weight to height in individual cases, and compare one set of observations with another. The law that weight is proportional to the height squared, which above was found to hold good regarding the period of active growth, may be assumed to be true also in adult life. We can thereby, leaving out of consideration at present the influence of age, obtain a scale of physique by which we can judge of the character of the build of any person, and compare him with others differing from him in height. By the formula $\frac{H_2}{W} = C$, or by proportion $W : H :: H : C$, we get a number which represents the relation of weight to height, whatever the stature may be. The method generally employed of representing this relation is by dividing the weight by the height, thus getting the value in pounds of each inch. This ratio, however, steadily increases with the height, so that for 66 in. we have a different ratio from that of 69 in.; the one may be 2·06, the other 2·15. But the mind cannot at a glance tell from these numbers whether or not the shorter person is of equally good weight proportional to his height as the taller man. When, however, by the method proposed it is found that both have the same coefficient of weight—viz., 32,—it is at once evident that they are equally well favoured in weight. Again, two men are each 69 in. in height, but the one is 148 lb. and the other 168 lb. in weight. Here the difference is represented by the coefficients 32 and 28. In recording the above cases, the physique may be represented respectively by 66.32, 69.32, 69.32, and 69.28, the first number giving the height and the second the coefficient of weight. In the previous portion of this paper the same method might have been followed, and simple C have been substituted for m-n, but the influence of age would not have been so well indicated. Including the earlier years now we may form the accompanying scale of physique. The age equivalent has been placed at the side, so far as has yet been determined:—

Table of Coefficients of Weight for the respective years of age (typical standard) by formula $\frac{H^2}{W} = C$.

Age (Male).	C.	Age (Female).
—	28	—
—	29	—
—	30	—
Non-labouring 20-30 / Labouring	31	—
	32	—
18	33	17, 18
17	34	16
16	35	15
—	36	14
15	37	
14	38	13
12, 13	39	—
10, 11	40	12
8, 9	41	11
7	42	8, 9, 10
5, 6	43	5, 6, 7
—	44	—

By this method we have the means of comparing more accurately different series of observations, and of ascertaining facts which are otherwise not apparent. Thus the average height and weight of the non-labouring classes of society are known to be greater than those of the artisan or labouring class. The data are given in Table IV., taken from Roberts.

TABLE IV.—*Showing the Mean Height and Weight and Coefficient of Weight for Males of the Professional or Non-labouring Class, and of the Artisan or Labouring Class, from ten to thirty years.* (*British Statistics.*)

	Non-labouring.			Labouring.		
Age.	Height in inches.	Weight in pounds.	Coefficient.	Height in inches.	Weight in pounds.	Coefficient.
10	53·0	67	41·9	50·5	66	38·6
11	54·5	73	40·6	51·5	70	37·9
12	56·5	80	39·9	53·5	74	38·6
13	58·5	88	38·8	55·5	78	39·4
14	61·0	98	37·9	58·0	84	40·0
15	63·5	110	35·7	60·5	94	38·9
16	66·5	126	35·1	63·0	106	37·4
17	68·0	140	33·0	64·5	116	35·8
18	68·5	146	32·1	65·5	122	35·1
19	68·75	148	31·9	66·0	128	34·0
20	69·0	150	31·7	66·25	132	33·2
21	69·0	152	31·2	66·5	136	32·5
22–30	69·0	—	—	66·5	138	32·0
25–30	69·0	154	30·9	66·5	140	31·6

Comparing the heights and weights for the respective years, it may be stated as a general fact that the more favoured class are both taller and heavier than the less favoured, or labouring class. But whilst this is true in actual weight, it does not hold good relatively—i.e., when the weight is compared with the height. Reference to the respective third columns of figures, giving the coefficients of weight,[1] shows at a glance that, under thirteen years of age, the artisan class are relatively more favoured as to weight—that is, they are heavier in proportion to their height. From the thirteenth year of age onwards the condition is reversed—they are now lighter. We have here made apparent the influence of manual labour on development as to weight—a fact which was not observable in the first two columns of figures, and has not been before so clearly determined. From this table it may be stated that, for a man between twenty and thirty years of age, his place in the scale should be between 30 and 32; or, taken otherwise, what his weight should be normally can be found by dividing his height squared by 31 or 32, according to his station in life. If above this weight, it shows excess; if below, there is deficiency. What range may be allowed within physiological limits can only be ascertained by future observation. In confirmation of this view, we would refer to a table given in the first volume of the Medical Statistics of the United States Provost-Marshal-General's Bureau (1875), in which Dr. Baxter gives the mean height and weight of "1000 men, taken at hazard from the records of the State of Maine." They are recorded for each year of the age from twenty to forty-six. It may be assumed that these men corresponded more closely with our labouring than with our non-labouring class of this country. Examining this table by our method—i.e., dividing the square of the height by the weight,—we found that from the twenty-first to the thirty-fifth year, inclusive, the uniform result was 32; in the subsequent years 32 occurs four times, 33 twice, 31 four times, and 29 once—at forty-six. We now see the reason why the value of m, used in the previous section, should range about the number of 50; it has reference to the fact that the typical coefficient of weight in adult life is 30 to 32. Below eighteen years the yearly coefficient is inversely as the age, 18+33=51, 17+34=51, and so on. The above examination of the subject applies to men only. We have not yet statistics sufficient to enable us to estimate the coefficients for women of adult age.

From the above examination of the subject, the following method of estimating the relation of weight to height, and of comparing one individual with another, or one series of statistics with others, may be formulated. 1. The square of the height in inches, divided by the weight in pounds, gives the *coefficient of weight*. 2. Applied to the mean or average of a series of observations, the rule gives *the mean or average coefficient* of the class or race of persons; applied to individuals, it gives the *personal coefficient*. 3. By the series of mean coefficients a *scale of physique* is formed by which we can compare the physique of individuals, of classes, or of races.

[1] In using these numbers it must be remembered that they are divisors, so that the smaller number is more favourable than the larger.

4. By dividing the square of the height by the mean coefficient, the *typical weight* for any height can be found. (See Tables II. and III.) 5. The mean coefficient varies with the age, but can be represented for the various years by side columns in the scale of physique (see scale). This method has for its recommendations, that it is based on a law of physical development. It enables the anthropologist to compare accurately one race with another, and one class of the same race with others; and to demonstrate the influence of the various causes which affect development. It also supplies the physician with the means of accurately recording the physique of his patients and comparing one with another, and may thereby reveal, in the course of future observations, important facts concerning the correlation of physique and disease.

PERINEAL LITHOTRITY.[1]

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IN view of the splendid results which have been obtained by Bigelow's operation of litholapaxy in all parts of the world, one naturally feels some hesitation in drawing attention to any other method of removing a stone from the bladder in which crushing forms a part. Let me, however, justify my advocacy of an exceptional proceeding, as applied to exceptional circumstances, by a few preliminary or explanatory observations.

One great advantage lithotomy possesses over lithotrity is that it permits the operator to ascertain the condition of the bladder and prostate, and to satisfy himself, by the use of his finger, that every fragment of stone has been withdrawn. The absence of this process in lithotrity is an important circumstance in explaining why recurrences or relapses should be more frequent after crushing than cutting operations. In a personal experience of lithotrity which, though not large for statistical purposes, includes considerably over 100 examples in different males, I infer not only that the liability to relapses after lithotrity is greater than after cutting operations, but that such recurrences are, as a rule, traceable to some purely mechanical cause which either the operation or the operator fails to meet.

In a paper[2] by Mr. Donald Day of Norwich on Repeated Lithotomy, he analyses the cases of recurring stone, at the Norfolk and Norwich Hospital, in 1024 individuals. He divides these recurrences into four groups in the order of their frequency: viz., (*a*) stones formed quite independently of the previous ones; (*b*) stones undetected at the first operation; and (*c*) stones formed on a fragment left behind at former operations; group *d* includes stones of bladder formation, due to chronic cystitis. Though the figures from which my own conclusions in reference to this point are insignificant compared with those at Mr. Day's disposal, they tend to support his classification, with this difference, that as my stone cases have been drawn from an area which, unlike the eastern counties of England, is not favourable for the development of calculus, I should put the spontaneous recurrence of stone, independently of a previous operation or other assignable cause, at the bottom of my list instead of at the top.

Taking the fifty cases of recurring stone in Mr. Day's analysis, twenty of these belong to group *a*, where the stones appear to have formed independently of the previous ones, thus leaving thirty cases where the recurrences were due to local causes, including undetected stones, stones formed on a fragment left after the previous operation, and cystitis. It will thus be noted that three-fifths of the recurrences, or three out of the four groups, were traceable to purely local causes in which the bladder, including its outlet, was involved. Though these figures of Mr. Day's only include lithotomy cases, they will also apply to lithotrity, but with probably greater force. From the careful examination of evidence of this kind, as well as from clinical observation, it appeared that, if the advantages of litholapaxy could be combined with those of lithotomy, so far as the latter proceeding relates to the digital exploration of the bladder, much advantage would follow the adoption of such a procedure in certain cases where a recurrence after lithotrity might almost with certainty be anticipated, by reason of the existence of structural complications, which the operation of crushing did not attempt to cope with. For this purpose perineal litholapaxy seemed to be well suited, inasmuch as it would permit of (1) the digital exploration of the bladder and associated parts, both before and after the removal of the stone; (2) the rapid evacuation of the stone; and (3) the drainage and irrigation of the bladder, should this prove necessary. It appeared that all this could be accomplished by a perineal urethrotomy without encroaching on the neck of the bladder, so far as the necessary incision was concerned. Such a proceeding is thus referred to by Dr. Gouley of New York,[3] who, writing in 1873, says: "The name of perineal lithotrity was given in 1862 by Professor Dolbeau of Paris to an operation completed in one sitting, by which the membranous portion of the urethra is opened, the prostate and neck of the bladder dilated instead of being cut, and a large stone crushed, and the fragments immediately extracted."

I have now had occasion to perform this operation in a somewhat modified form, presently to be described, in four cases of stone in the bladder. In three of these the prostate was large, and I was desirous of draining the bladder after the stone had been removed. In two instances litholapaxy had been previously performed. In my fourth and last case the stone was very large; the following are the particulars:—

A young man, aged eighteen years, was under my care in the Liverpool Royal Infirmary during the past summer. He was suffering from a large phosphatic stone in the bladder, which it was thought could be removed by litholapaxy. The patient being placed under ether, I found it impossible to grasp the stone with the lithotrite in such a way as to enable me to crush it, for, though I could seize it easily enough, the blades could not be approximated sufficiently to permit of my locking the instrument. I therefore proceeded with a perineal lithotrity, making my superficial incision as for lateral lithotomy. I opened the membranous urethra, and readily passed my finger on into the bladder, as for ordinary exploration. Finding the calculus to be fully as large as anticipated, a strong pair of forceps was introduced into the bladder, with which the stone was crushed and extracted. When the finger showed the bladder to be free, the latter was well washed out with a perchloride solution, and then a large drainage tube was inserted. The tube was kept in for four days, and then withdrawn. The patient was well and up on the eleventh day, passing all his urine by the urethra. Though the stone weighed about three ounces, it was broken up and evacuated in something under five minutes. In the other three cases referred to, a similar proceeding was practised. In one of these the stone was uric acid, the remaining two being phosphatic; in two the ordinary median boutonnière operation was practised; whilst in the third a preliminary lateral incision was made, as in the case narrated in detail.

So far as dilating the neck of the bladder was concerned, I have been able to accomplish this with my finger, aided sometimes by Wheelhouse's small gorget. I would wish, however, to draw attention more particularly to the forceps I employ for crushing and evacuating the stone. They consist of a strong pair of ordinary bladder forceps, with a cutting rib down the centre. They are sufficiently strong to break any stone which can be fairly grasped; they are, in fact, constructed on the same principle as the blades of a lithotrite, and are intended for use in the same manner.[4] Looking at the fragments of the stone removed from the young man whose case I have just related, it can be judged what these forceps are capable of doing, both in crushing and extracting. In this instance they enabled me to break up and remove a calculus in a few minutes, a process which I do not think could have been safely accomplished under half an hour by the ordinary lithotrite and water evacuation.

I hardly think I need apologise for bringing under notice an operation which may, in some cases, be revived with considerable advantage. Circumstances are now very different from what they were twenty-five years ago, when perineal lithotrity had numerous advocates. Thompson had not then taught us the great value of digital exploration in

[1] Read before the Congress of Physicians and Surgeons, Washington, U.S.A., September, 1888.
[2] British Medical Journal, Feb. 13th, 1886.
[3] Diseases of the Urinary Organs, 1873.
[4] They are made for me by Messrs. Krohne and Sesemann of London.

diseases of the bladder; Otis had not demonstrated the full capacity of all parts of the male urethra to dilatation; Bigelow had not shown us the tolerance of the bladder to prolonged but gentle manipulations; nor had we learnt the value of drainage and irrigation of the bladder, and how much operative surgery was capable of doing for the enlarged prostate when this was found to complicate stone. In the presence of these advances, I believe that perineal litholapaxy will be found of considerable service, and that its more general employment will tend to reduce the number of stone recurrences after litholapaxy as usually practised.

Liverpool.

ON PERFORATION OF THE VERMIFORM APPENDIX IN ITS RELATION WITH ATTACKS OF PERI-TYPHLITIS.[1]

BY JOHN A. MACDOUGALL, M.D., F.R.C.S. EDIN.,
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AMONG the difficulties which pertain to the practice of medicine there is none greater than that at times attendant upon a correct differential diagnosis, and, although in certain cases it may not be *absolutely* necessary for the good of the patient that this should be at once decided, there are others in which such knowledge is essential for determining on that line of treatment which is the safest and the best. A correct diagnosis may prove of the highest importance where mere medical measures must suffice, and it assumes a higher value when, through a surgical procedure—itself of some magnitude,—relief and recovery can alone be effected. The interest and the anxiety inseparable from attacks of severe abdominal pain are fully recognised as well as the difficulty, in many instances, of determining the exact condition which underlies them. And this difficulty is deepened and largely increased when we find that in one especial region of the abdomen there may arise three distinct morbid conditions, every one of them marked by the closest similarity in their symptomatology, but differing very widely in their prognosis and in their treatment.

Under the terms "typhlitis" and "peri-typhlitis" we have been accustomed to recognise a condition of localised abdominal inflammation evidenced by the presence of pain, of a sense of resistance and slight dulness on percussion in the right iliac region, by tenderness on pressure, and fulness, which fulness in a very considerable proportion of cases assumes the form of a well-defined tumour. This local condition is not usually attended by very grave constitutional manifestation, and a favourable prognosis may, as a rule, be given. The terms of this prognosis I can best render in the words of Dr. Hilton Fagge.[2] "I have, indeed, a strong conviction," he says, "that no case in which the disease can be diagnosed as being seated in the cæcum ever terminates fatally if judiciously managed." And, again: "Even when typhlitis presents itself clinically under the guise of intestinal obstruction or of *diffused acute peritonitis* [the italics are mine], I believe that it scarcely ever destroys life if judiciously managed." This favourable estimate of the risks attendant upon an attack of peri-typhlitis I read for the first time more than a year ago, and then, after some considerable experience of the disease, I would have fully endorsed it, but within the past eight months it has happened that four cases have come under my own observation; and of that of a fifth I have intimate knowledge, in which, apart, may be, from a history of greater severity in the subjective symptoms, the whole conditions, local and general, were at the beginning but those of a peri-typhlitis, and yet all these five sufferers are now in their graves. From a consideration of the morbidity which gave rise to such sad issues there spring these two questions: Wherein lies the difference between the simple and the fatal cases of peri-typhlitis? and have we any knowledge by which in their early days—for, as a rule, there is not much in their later—by which we may distinguish between them? Perhaps the best way in which we can approach a discussion of this subject is by bringing under notice, very concisely, the clinical features in three cases of peri-cæcal trouble, all differing, I believe, in their etiology, and endeavouring through the relation of their symptoms, and their issue, to determine the features which distinguish the favourable cases from those of graver omen.

CASE 1.—The early progress of the first case I will give in the words of the sufferer herself, a lady who has had indifferent health, but who had at no period of her life any history of previous abdominal trouble: "I remember quite well that I got 'a chill' in going into a cold chapel at about 11 A.M. one day; it was a horrible day of east wind and wet. I never was warm again all day, but had no pain—just shivered and was miserable. I awoke with a pain at about 4 A.M. next morning, though not very severe, and it went on getting rather worse, until it grew very bad about 1 o'clock, and then it seemed as if a bolt of fire had been passed through me. I fainted, and was sick, and had no relief until I had that blessed opium." This lady, when I first saw her, was suffering much pain in the right iliac fossa, where there was tenderness on pressure, with a sense of resistance, but no dulness. The expression was good, the pulse quick (120), and the temperature 101·2°. She had only vomited once, but felt nauseated. Next day the general condition was worse, the pulse was quicker and smaller, the temperature 102·2°, and there was distinct fulness in the fossa, but no tenderness beyond its limits. I need not record the daily progress, but will only add that the highest temperature was 103°, and that for three or four days its average was close upon 102°; that a distinct tumour formed in the course of the third day; that this tumour lasted for fully a fortnight, that it gradually subsided and disappeared, and that the line of acute tenderness never extended much beyond its limits. Four years have elapsed since this attack was recovered from, and she has had no return of pain or sense of discomfort in the affected region.

CASE 2.—An active healthy boy, aged fifteen, with no record of previous illness, and with no history of any previous attack of abdominal pain, was, six hours after eating a hearty meal of uncooked mussels, seized with sudden pain in the right iliac fossa. His doctor saw him some hours afterwards, and had no difficulty in satisfying himself that the lad had a typhlitis. His temperature rose to 102°; and, without increase in the region of tenderness, a well-marked tumour slowly formed. I saw him on the sixth day of his illness, for retention of urine had made its appearance and added to the anxiety of the case. He had then a good aspect, a pulse of 90, a temperature of 101°, and a well-developed peri-typhlitic tumour, with no tenderness beyond an inch or so from its edge. He had not vomited except in the beginning of his illness, but had some diarrhœa alternating with constipation. His recovery, as his attendant notes, "was steadily progressive, the tumour not disappearing for more than a fortnight after the cessation of pain." In neither of these cases was there any vomiting but that which accompanied the onset of the disease, and there was no general abdominal tenderness and no marked abdominal distension or rigidity.

CASE 3.—M. H——, a healthy girl, aged twelve, was, within a short time of having eaten a hearty breakfast, seized with very acute pain in the right side of the abdomen, quickly followed by vomiting. She was in no way collapsed, but complained bitterly that the fomentations applied to the painful region aggravated her suffering, and that a dose of laxative medicine which was administered increased the tendency to sickness. In the twenty-four hours following she had severe pain and constant retching. When first visited on the morning of March 5th, she was found with a bright expression of face, making complaint of bad pain in the lower abdomen on the right side and of complete anorexia. Her pulse was 80, of fair character; her mouth temperature 99·6°; her abdomen was somewhat full, but was only tender on pressure in the right iliac region, in which region a tumour having the characters of that observed in cases of peri-typhlitis was readily recognised. In the evening she was better; the vomiting had entirely ceased; the pulse was still 80, of somewhat fuller force; temperature 99·6°; and the region of tenderness had not increased in extent.—7th: Has passed a good night; facial expression good; pulse 75; temperature 99°; tumour in iliac region more distinct, and no increase in the extent of abdominal tenderness. In the evening she was visited in my absence by Dr. Helm, who found that she had just returned to bed after having been at stool (a procedure against which her nurse had been warned), where she had strained a good deal, and this without effect. While in this position the severe iliac pain reappeared, and was

[1] Read at a meeting of the Carlisle Medical Society, April 12th, 1888.
[2] Principles and Practice of Medicine, vol. ii., p. 175.

much complained of when she was examined. Apart from increase in suffering there was no difference in her condition otherwise. The temperature and pulse rate remained steady.—8th: To-day her aspect has changed; her face wears an anxious expression; her eyes are sunk, and she is evidently worse. Has had a bad night, with return of vomiting. The skin feels a little cold. The temperature in the mouth is 99°; her pulse is 140, feeble, and indistinct in character. The outline of the tumour is not nearly so plain, and there is considerable increase in the area of abdominal tenderness. The accident which had happened to her was very evident, and operation was spoken of, but was, unhappily, not entertained. Stimulants were administered, the opium pushed, and such means employed as are much useful in rallying from depression. In the evening she was in the same state. There had, however, been no return of the vomiting, and the abdominal tenderness had not undergone notable increase.—9th: This morning she is somewhat better; her temperature is still 99°, but her pulse has fallen in number, and is of fuller character. The abdominal condition was unchanged; but as it was now evident to her relatives that her best, and indeed only, chance of recovery lay in a surgical operation, they consented to its performance. Through a median abdominal incision there were not observed the evidences of a general peritonitis, but when the small intestine was gently pulled aside to admit of the introduction of the fingers, it was found to be intensely injected and coated at points with thick lymph. When the coils adherent to the abdominal wall were separated in order to reach the cæcum, a drachm or two of bad-smelling pus passed along the detaching fingers, and with it an orange pip and a raisin pip. An attempt to bring the cæcum forward failed on account of firm adhesions, and I therefore cut down upon it by a slightly curved incision external to the line of the deep epigastric artery. Then it was readily turned out, and in the middle of the appendix was found an ulcerated opening with greyish edges, through which the pips had passed. The proximal and distal ends were now examined through this opening, but without discovering the presence of concretions or other obstruction; the sloughing edges were cut away, and as the appendix was up to its extremity very closely adherent to the colon it was not removed, but its divided ends were thoroughly occluded by Lembert's stitch. The abdominal cavity was washed out with warm boracic lotion and the incision closed. She rallied well from the shock, and was in the evening easy and comfortable; but in the course of the night the vomiting returned, and became of that gulping character of such evil omen in cases of peritonitis, and she sank on the following day. Only after the removal of the pips were we told that at Christmas she had, after having eaten freely of raisins, had an attack of pain similar to that with which her fatal illness was ushered in, and that between that time and March 6th she had made occasional complaints of cramp in the right iliac fossa.

I have selected these three cases from a very considerable number that have fallen under my observation within the last few years, and I have done this because they will serve as examples of the various ways in which cæcal and peri-cæcal harm may be provoked.

(To be concluded.)

"IT IS TO THE LYMPHATIC SYSTEM AND CELL AGENCY THAT MOST, IF NOT ALL, FORMS OF DISEASE ARE DUE."[1]

BY W. GROOM, B.A., M.D. CANTAB., M.R.C.S.E., L.S.A.

IN every variety of disease to which the human body is liable we have a direct cause producing a definite result, and to determine the exact nature of the disease both the cause and its result have to be taken together into consideration. Thus fever is a symptom or result of some agency in the body producing that condition; but to constitute scarlet fever we must have these symptoms or results take a more or less definite course, be of a definite character, and dependent upon a specific agency. Hence in scarlet fever, and also every other variety of disease, we have an agency or exciting cause and results or symptoms originating therefrom. Between these a definite period of variable duration exists, known as the latent period, and it is during this period that I believe highly important changes take place. For example, in the ordinary operation of vaccination a definite material is introduced into the body at a certain spot, and no immediate results are visible, and it is only after the lapse of a certain period of apparent quiescence that a definite local result manifests itself, and this gradually takes a progressive course, accompanied with a distinct constitutional effect.

The question arises, What is it that occurs between the inoculation and the commencement of the papular formation with its attending febrile symptoms? To arrive at a possible answer to this question, we must first bear in mind the nature of the lymph inoculated. This is a slightly viscid, clear, and transparent fluid, with alkaline reaction and little or no smell, and when viewed with the microscope is seen to have a clear liquid portion or plasma, and a solid portion made up of corpuscular elements which float in the plasma or lymph; these are few in number, of somewhat rounded but irregular outline, and correspond in all particulars to a description of the corpuscles found in the lymph of the lymphatic system, and both of these are not far removed in character from that of an embryonic protoplasmic cell. In the next place, we must recollect that the seat of inoculation is constructed of cells, arranged with varying regularity in layers; the lowermost of these, belonging to the epidermis, are elongated in shape and perpendicularly disposed upon the dermis, and with their extremities intimately connected with the corresponding irregularities of the dermis. Immediately above these, the cells are of more rounded shape and are furrowed, and so arranged that these furrows approximated together form little channels. Above these we have the flattened cells which form the upper and denser portion of the epidermis. With the exception, therefore, of these latter layers, the epidermal cells are sufficiently loosely packed together as to leave interspaces, however small, between them; and, moreover, in these spaces leucocytes or corpuscles similar in structure to those spoken of in vaccine lymph and the lymphatic system may here and there be observed, and they also contain a fluid plasma. The dermis or subcutaneous tissue also shows, on close examination, the existence of similar spaces, with their cells and plasma, and continuous above with those of the epidermis, and below in the closest contact, if not continuous, with the lymphatics. These spaces may therefore be looked upon as the very commencement of the lymphatic system. Now, in vaccination, these spaces receive some at least of the inoculated vaccine lymph; for, if the lancet wounds the bloodvessels in its course, it has first passed through spaces existing above them, and, as the blood current is rapid and therefore does not afford sufficient repose for developmental changes to take place in it, we must, I think, conclude that such changes as do take place occur in these lymph spaces. In their ordinary course of life the lymph cells grow and multiply, and in their growth assimilate materials from and modify the character of the plasma in which they live, in much the same way as a torula cell of yeast assimilates material from the saccharine solution in which it grows during the process of fermentation and converts that solution into alcohol. When, therefore, the plasma derived from a vaccine vesicle is deposited in a lymph space, it mixes with the plasma already existing there, and the cells in these spaces now live in material much of which is the product of vaccine lymph cells. In their growth and physiological functions they assimilate and build themselves up with this material, and so get impressed upon them the same characters as the cells of vaccine lymph—as Dr. Creighton has called it, become spermatised. These cells then, in their turn, modify the plasma of the next space (remembering that the spaces are virtually continuous), and so on, until, by an onward progress from the periphery inwards, varying in its extent and speed according to the virulence or specific strength of the inoculated cells or cell products, the whole lymphatic system becomes spermatised and brought into a similar condition to the foreign agency introduced. We need now only recollect the intimate connexion between the lymphatic system and the vascular system, to understand how the whole blood-vascular system generally becomes, in the more virulent varieties, infected. Since the vaccine lymph inoculated is foreign to its new situation, it acts as an irritative agent, producing a local and general inflammatory result, but tainted with the

[1] Extract from Thesis for the M.D. Degree.

peculiarities of the disease from which it is derived. Looking further into the matter, let me again state that the vaccine lymph ultimately infects the whole system as above described, and so long as this general infection remains in the system, any subsequent inoculation with vaccine lymph is unable to bring about the same definite result, since it is no longer foreign to the plasma of the spaces then receiving it; but so soon as this influence has died away or been worked out, any subsequent vaccine lymph inoculated would have the same power again, varying in extent, however, with the greater or lesser loss of the influences. In vaccination the accompanying symptoms are weak in intensity on account of the weak spermatising influence of the vaccine lymph. They are febrile in character, and are no doubt due to an altered condition of the blood, brought about by the changes in the lymphatic system being conveyed by the lymphatics into the bloodvessels. As the contagium of variola can only produce variola of a like kind, so also the contagium of a definite exanthematous affection can only produce the skin eruption peculiar to its progenitor. It would seem that the specific fevers vary somewhat in the influencing power of their contagia; in many it seems to be life-long, and hence it is that one attack of these gives immunity from subsequent ones. But we must recollect that there is always a tendency for this influence to diminish by age, and that therefore in some cases it sufficiently disappears to render the subject liable to a further invasion of this particular disease. When from ill health the physiological activity of the lymphatic cells in the system is diminished in power, it is naturally even easier for a contagium to attack them than when in perfect health. Hence it is that women after parturition so readily contract scarlet fever. Also when so reduced in strength from nerve influence or other causes their products suffer and are weak, if not abnormal in constituents, and these may therefore develop diseases without any external agency whatever; hence the connexion between parturition and phlegmasia dolens.

Taking the above-stated view respecting the lymph spaces and their connexion with the lymphatic system, we are enabled to state that this system has an extremely wide distribution throughout the human body; existing, in fact, not only in the cutaneous and subcutaneous tissues, but also internally it is found in the follicles of the lymphatics, Malpighian corpuscles of the spleen, Peyer's patches and solitary glands of the intestine, follicles of the pharynx, tonsils, trachoma, glands of the conjunctiva, also around bloodvessels, in the pia mater, smaller bronchi, beneath the pleural endothelium and also that of the peritoneum, alimentary mucous lining, and medulla of bones. From this immensely wide distribution, therefore, we have no difficulty in understanding how easily the lymphatic system can be reached from without, and that the contagium of a disease need not necessarily be artificially inoculated to gain an entrance into it. Scarlet fever, for instance, seems to gain entrance by the throat and respiratory tract. In measles the conjunctivæ seem to have a very early primary connexion with the specific contagium. In typhoid fever it would seem to gain admission by the intestinal tract, judging from the lesions of the agminated and solitary glands and secondary involvement of the mesenteric glands. Passing from the so-called specific fevers, we may next mention syphilis; and here we also have a distinct inoculation in the neighbourhood of the lymphatic system, and the neighbouring lymphatic glands are soon involved; and further, before the characteristic eruptions make their appearance, there is a distinct latent period in which changes such as I have described can go on; moreover, we know also the beneficial effect of mercurial inunction on this disease. In syphilis, however, the specific influence seem extremely tardy in working itself out. Again, in pyæmia we find the seat of primary mischief to be some local abrasion or wound accidentally or surgically made, or after parturition, and in all of these the connective tissues and lymphatics are early involved; and although cases do occur in which no such lesion seems apparent, we may still suppose that the virus can reach the lymphatics by the respiratory tract. In elephantiasis græcorum, the cellular matter which infiltrates the affected tissues is probably developed from the connective tissue cells and leucocytes. In ague, the spleen is soon and sometimes permanently involved, and it will be remembered that this organ is intimately connected with the lymphatic system. In skin affections we can also show forth this lymphatic connexion. Thus in erysipelas the tonsils are often the seat of premonitory inflammation; the erysipelatous swelling contains lymph and corpuscles, the neighbouring lymphatics are enlarged and tender, and the blood contains a distinct increase in the number of its white corpuscles. It would appear, therefore, that in those forms of disease, at least, which are recognised as the result of a contagium, the lymphatic system seems to be the chief seat of the more important changes which go on during the so-called latent period, and that the definite symptoms which follow are results of these changes conveyed by the medium of the bloodvessels to the several organs and other parts of the body. Taking now into consideration other varieties of disease, such as tubercle and tumours, we still find the lymphatic system connected with their development or spread, for there seems to be but little doubt that pulmonary tubercle has its origin in the inter-alveolar septa and parietes of the bronchioles, in which situations are found embryonic cells and leucocytes in large numbers; and, further, the spread of tubercle follows a lymphatic tract, as in those cases in which a caseous lymphatic gland is the source of generalised tuberculosis; also we know that the mucous membrane of the intestinal tract, a part most closely connected with the lymphatics, is a common seat of tubercle.

As I have stated, it is from the product of a cell's activity, in its turn affecting or spermatising other cells in its immediate contact by their assimilation of this abnormal product (ordinary lymph being the normal medium of a healthy leucocyte), that all the subsequent changes are probably due; it need not of necessity in every instance be the product itself that gains admittance into the body to act as the germ of a disease, but the particular cell manufacturer itself may in some instances enter and exert its direct influence, therein, or even the normal leucocytes or cell elements of the body may, by abnormal irritation or nerve influence, have their physiological characters changed, and the lymph therefore in which they grow will by their assimilative and productive process be likewise ultimately changed in a corresponding manner. It is by this latter method that I would explain the enlargements of lymphatics from distal irritation, and also the possibility of developing tubercle artificially by other material than the products of tuberculosis, as Sanderson and others have long ago shown. Also this will, I think, in some manner explain the connexion between a sudden shock and subsequent development of disease dependent thereon, such as we now see from railway accidents, and such as I believe to have been the case in a young patient of mine who died of localised meningitis, which gradually developed itself in a previously perfectly healthy person, with no trace whatever of tubercular history, soon after receiving a severe shock by witnessing the accidental death of a young friend whom he was chasing in the dark, and who, forcibly running against a water hydrant on the roadside, received such internal injuries as to cause rapid death. Again, there may be in some cases an hereditary tendency for leucocytes or cell elements to take on an abnormal growth at a fitting opportunity afforded by ill health or the decadence of life, implanted upon them by the parent just in the same way as features and peculiarities are implanted on the offspring of man and animals. Also the foregoing ideas do not exclude bacteria as a source of disease, they being equally living cells and bringing forth their own peculiar products. Finally, we know that tumours have a cellular origin, and in one class at least—viz., the carcinomata—the lymphatics are most intimately connected with their growth and spread, for the alveoli of cancers may be regarded as the dilated origins of the lymphatic system. Whether these can be derived from contagion seems as yet difficult to positively determine, but from cases which have come under my own observation I am personally inclined to believe it possible. Taking, then, into consideration the above ideas, I desire to maintain that it is to the lymphatic system and cell agency that most, if not all, forms of disease are due.

Wisbech.

NEW INFIRMARY, LANCASTER.—A long-needed want is about to be provided for Lancaster by the erection of a new infirmary. Mr. Williamson, M.P., has generously offered £5000 towards the building fund, and the committee, being thus encouraged, have determined to purchase a site eligibly situated in close proximity to the town, which forms a part of Springfield Park. To erect a suitable building and provide a permanent sustentation fund, it is expected that between £10,000 and £15,000 will be required.

A FATAL CASE OF POISONING BY MUSSELS, WITH REMARKS ON THE ACTION OF THE POISON;

ILLUSTRATED BY TWO SLIGHTER CASES OCCURRING AT THE SAME TIME.

BY W. PERMEWAN, M.B. LOND.,
SENIOR HOUSE SURGEON TO THE LIVERPOOL NORTHERN HOSPITAL.

A MAN aged about forty was admitted into the Northern Hospital, Liverpool, on Aug. 29th, at 2.50 P.M., apparently dying. During the morning of the same day he had consumed a large quantity (from two to three quarts) of mussels, which he had scraped from the bottom of a barge in the Clarence Graving Dock, and had eaten uncooked. After the meal he loitered about the dock trying to find work, with one or two companions, whom he afterwards left. At 2 o'clock he was found by a police constable lying quite unconscious in one of the sheds of the dock. He was at once removed to the receiving house and efforts made to restore consciousness. These efforts failing, the ambulance of the Northern Hospital was summoned, and the man was conveyed to that institution.

On admission the patient was absolutely unconscious; his face was livid, his pulse was almost imperceptible, and he was giving one or two convulsive gasps at intervals of about a minute. In fact, he was apparently moribund. His pupils were widely dilated and did not respond to light, and there was no conjunctival reflex. Clearly he was in the last stage of asphyxia. Artificial respiration was at once commenced, and ether freely injected under the skin. This improved the heart's action considerably, and after an hour his pulse became fairly good. There was, however, not the slightest attempt at voluntary breathing, and on suspending the artificial respiration for a minute or two the face became blue and the pulse began to fail. The stomach was then washed out by syphon action, and a considerable quantity of undigested mussels removed. The symptoms did not, however, improve; the conjunctival reflex remained absent, and there was not the slightest reflex in the pharyngeal muscles on introducing the tube into the œsophagus. Ether, with three minims of liq. atropiæ sulph., were then administered hypodermically, which improved for a time the heart's action; this injection was assisted by an enema of brandy and beef-tea. Artificial respiration was continued for three more hours continuously by Silvester's method. An ounce of brandy was then introduced into the stomach, and two doses of $\frac{1}{100}$th grain of strychnia were given hypodermically at intervals of an hour. The patient's condition remained practically unchanged for the next three or four hours. As long as respiration was kept up by artificial means the pulse remained fairly good, but if it was suspended the heart began to fail. There was at no time any attempt, even of the slightest, at voluntary breathing. About 11 P.M. the pulse began to get intermittent and weak, and, in spite of several injections of ether, finally stopped at 11.45, artificial respiration having been kept up for nine hours continuously. The pulse throughout was slow, averaging about sixty to the minute; the temperature remained fairly high till the circulation began to fail, when the surface became quite cold. There was no vomiting or purging. All the limbs were perfectly motionless and flaccid, and unconsciousness was absolute.

About 4 o'clock on the same afternoon another man was admitted who had eaten mussels from the same source, and on the following day a third patient suffering in the same way. Both these men had precisely similar symptoms; both had eaten largely of the mussels, but chiefly when cooked. They complained of giddiness, and staggered slightly in their gait; they had a feeling of numbness in both hands and feet, and there was anæsthesia of both hands. They had a feeling of great prostration, and evidently had loss of muscular power in both arms and legs. An emetic of mustard-and-water, which brought up large quantities of undigested mussels, and a night's rest in bed, were sufficient to relieve them of all symptoms.

Remarks.—This case is one of unusual interest for various reasons. The length of time during which artificial respiration was able to keep up the circulation, the fatal issue, and the fact that such grave symptoms supervened on the eating of such a common article of diet as the mussel, certainly make the case a remarkable one. The mode of action of the poison and the cause of death seem pretty clear when the case is looked at in the light of the two slighter ones. The poison was evidently not a cardiac poison; the heart continued to beat many hours after all voluntary breathing had ceased. The most striking facts were (1) the paralysis of all the voluntary muscles, and (2) the absolute unconsciousness. The latter was not secondary to asphyxia, for it showed no alteration even when respiration (artificial) was fully established; it was apparently the result of some powerful poison acting directly on the cerebral convolutions. It will be noticed that giddiness and a staggering gait were present in the less severe cases, showing that the brain was directly affected. As regards the muscular paralysis, that of course was one of the phenomena of the comatose condition; but the muscular weakness, combined with the dysæsthesia and anæsthesia noticed in the other two patients, would seem to indicate that the peripheral nerves were also directly acted on by the toxic agency. The respiratory failure might have been in the fatal case a result of this paralysis of the nerves, or, as the brain was evidently affected, might have been caused by poisoning of the respiratory centre. This latter hypothesis seems less likely from the fact that the neighbouring cardiac centres were unaffected. What the poison was in these mussels I am unable to guess. It was not the result of putrefaction, for the bivalves were quite fresh; it was not, as was suggested at the inquest, copper from the boat's bottom, for the barge was not sheathed in metal; nor was it any other irritant poison, for there were no irritant symptoms throughout. The fact that in the fatal case the mussels were eaten raw, whereas in the others they were for the most part cooked, only a few being eaten in the natural state, is certainly suggestive; but, on the other hand, the man who died took the mussels into a perfectly empty stomach, and had only had very little food for some days, and was thus more likely to succumb than his companions, who were fairly well fed, and had eaten breakfast that morning. I am not aware that any investigations have been made with a view to discovering why mussels are at times poisonous, and what the poison is. I can find no reference of any value to the subject in any of the ordinary books on poisons. I believe one observer has succeeded in isolating some principle which has produced symptoms like those detailed above, but I have not been able to get at his paper on the subject.

At the inquest on this unfortunate man, the coroner of Liverpool expressed his surprise that there was apparently no scientific knowledge as regards these bivalves, and also his hope that this case might be the means of having the subject investigated. Large quantities of mussels are consumed in Liverpool by the poorer classes; and it certainly seems desirable that some knowledge should, if possible, be obtained on the subject, in order to avoid on the one hand the deprivation of one of their few luxuries which the poor people of Liverpool will certainly, at any rate for the next few weeks, enforce on themselves, and on the other the occurrence of such unfortunate cases as that of the poor man who met his death through partaking of them.

Liverpool.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

GUNSHOT WOUND OF THE PETROUS PORTION OF THE TEMPORAL BONE, PRODUCING FACIAL PALSY AND INTENSE PAIN, RELIEVED BY REMOVAL OF PORTIONS OF THE BULLET FOUR YEARS LATER.

BY W. R. C. TREASURE, M.R.C.S.

F. H——, aged thirty-two, clerk, shot himself in the right ear on Oct. 29th, 1884. Two shots were fired, and the bullets entered the external auditory meatus, penetrating the bone about half an inch from the entrance. He became unconscious for about eight hours afterwards. On Nov. 11th an attempt to remove the bullets was made, and part of one extracted under chloroform. Further portions were removed on Nov. 21st and Feb. 1st following, the pieces with the

one first removed weighing within a grain or two of the corresponding bullet. During this time he was subject to intense pain, with nearly complete deafness, and a sensation of weight if he lay on the left side. These symptoms were partly relieved after the last operation, but a continuous discharge of pus remained, with an occasional powder grain in it, and facial paralysis gradually supervened. In August, 1885, he went into University College Hospital under Mr. Barker's care, at which time it was not considered justifiable to search by operation for the second bullet, but careful antiseptic treatment of the wound in the ear resulted in the Eustachian tube being freely opened, but no permanent relief was given. He came under my notice early this year with a discharge of muco-pus from the ear, which occasionally became obstructed, causing most acute pain in the ear, accompanied by tenderness over the mastoid bone, which were relieved when the discharge flowed freely again. There was facial paralysis, with difficulty in swallowing, and dribbling of saliva, worse when the discharge was retained. He was still unable to lie on the left side, was seldom free from pain, and was quite deaf in the right ear. Finding I could give him no permanent relief, and thinking there was another bullet in the temporal bone, I advised him to consult Mr. A. E. Barker again with a view to an operation, and he went into University College Hospital on June 14th. On June 22nd he was placed under chloroform, and Mr. Barker made an incision, beginning half an inch above and half an inch behind the external auditory meatus, running vertically two inches and a half upwards, joined by a horizontal one an inch long at the top. The flap, including the ear, was turned forward, the bone bared, and the periosteum raised. The front part of the base of the mastoid was widely gouged away, and three small pieces of lead removed, which were embedded beneath the mastoid antrum. The mastoid process was so densely sclerosed that it had to be cut out with the surrounding bone. The cavity of the antrum was opened, with a drop of muco-pus in it, syringed out, and made to communicate freely with the opening cut in the bone and with the external auditory meatus, which was almost impervious before. The wound was stitched top and bottom, a drainage tube placed in the antrum, and a dressing of iodoform and salicylic wool applied. The symptoms were relieved after the operation, the temperature never rose above 100°, and the patient made a rapid recovery. The wound in the antrum was kept open until the drainage tube was forced out by the growth of new bone. The facial paralysis was much lessened, and, beyond a slight discharge from the ear, the patient got well and resumed his occupation.

Remarks.—The interest in this case centres round the second bullet. It was not thought probable at the time that he could have discharged two bullets into the ear, and the room was searched for the second bullet; but though it was not found, no search was made for it after the pieces which seemed to correspond to one bullet had been extracted. Probably the second bullet fired, if the portions removed by Mr. Barker belonged to it, followed the track of the first one, struck its base and splintered; if so, the portions of bullet first extracted may have belonged to the second bullet fired. The extreme density of the bone probably saved the man's life, and concussion did not occur with sufficient rapidity to prevent him firing the second shot. The facial palsy is interesting, being probably due to pressure from the new material thrown out for the repair of the bone. I am indebted to Mr. Barker and to Mr. Sydney Holder, house surgeon at University College Hospital, for the notes of the operation and subsequent treatment.

Cardiff

CALOMEL AS A DIURETIC IN CARDIAC DROPSY.

By A. G. AULD, M.D.

IN no department of practical medicine have more brilliant results been achieved of late years than in that of cardiac therapeutics. This is partly owing to a more extended knowledge of more or less familiar drugs, and partly to the introduction of certain new ones of acknowledged excellence in their several spheres, of which the chief is strophanthus, the discovery of Professor Fraser. Within the past year or two, mercury, in the form of calomel, has specially engaged the attention of several observers. As a cholagogue purgative, indeed, notably in mitral stenosis with engorgement of the liver, its beneficial properties have been long recognised, while blue pill is well known to increase the efficacy of digitalis and squill. Nevertheless, the powerful diuretic properties of calomel seem to have been overlooked until quite recently, when the investigations of Jendrassik, Stiller, Mendelsohn, and others directed attention to the subject. I have observed this action of the drug in causing a copious discharge of urine and dispelling anasarca; and it does not seem to be impeded by the complication of a certain amount of structural disease of the kidney. In two of the cases medium doses were employed till diuresis set in; in a third, in which the effect of mercury was known, a single dose of twelve grains was administered, which was quite as efficacious.

As to the mode in which calomel exerts this diuretic power, there seems to be some difficulty in determining. Mr. Locke,[1] guided by the researches of Dr. Noël Paton, suggests that the diuresis is caused by an increased production of urea, consequent on the supposed hæmolytic action of mercury on the blood corpuscles. This view, however, is open to serious objection. It is no doubt true that urea acts naturally as a diuretic; but we find that those cases wherein the blood is loaded with urea are frequently just those in which the secretion of urine is diminished, but which nevertheless tends to increase after the administration of calomel. Also, if an increased secretion of urea be the cause of the diuresis, we should expect such drugs as antimony and salicylic acid to be even more powerful as diuretics, as their exhibition is followed by a greater excretion of urea than in the case of calomel. Again, it could hardly be possible for a few doses of calomel to have such a hæmolytic action as that described, but rather the reverse, and, even granting that it had, the resulting anæmia would be accompanied rather by an increase than by a diminution of the dropsy.

In endeavouring to determine the *modus operandi* of calomel as a diuretic, its influence, if any, on the heart and bloodvessels may first be considered. In moderate doses it is found to have, after the manner of arsenic, a somewhat paralysing action on the vaso-motor nerves corresponding to a slight fall in the blood pressure. It is evident, therefore, that its action in this wise may be eliminated from the causation. It may next be considered whether calomel may not exert a stimulant action on the secreting cells of the kidney, after the manner in which certain other drugs, such as caffeine, appear almost exclusively to cause diuresis, according to the experiments of von Schroeder, Langgaard, and other observers. That it should do so is, I think, probable, though only to a certain extent, as it is stated to have but a slight diuretic effect in health. In addition to this, its influence on the composition of the blood, in virtue of its alterative properties, has, doubtless, an important bearing on the phenomenon in question. In a few medicinal doses it causes an increased activity in the lymphatic system, and brings about the destruction of deleterious ingredients in the blood, with an improvement in its nutrition, and consequently renewed vigour in the kidneys.

It need hardly be mentioned that much discrimination is requisite in the employment of the drug, and trial should first be made of the effect of small doses. It is also useful to remember that mercury is best borne by dark-complexioned persons. In suitable cases, it combines the advantages of a purgative and diuretic, without leaving injurious effects on the heart or kidneys. To whatever extent it may ultimately be found useful, it is pleasing to note meanwhile that attention has been drawn *de novo* to one of the best of those of the old remedies which, like bleeding, have fallen, it is to be feared, into an unmerited neglect, in a too eager desire to adopt the latest novelty or to follow a shifting fashion.

Glasgow.

[1] Practitioner, September, 1886.

PROLAPSE OF THE FUNIS TREATED SUCCESSFULLY BY MANUAL REPOSITION.

By W. J. NICHOLLS, M.R.C.S., L.R.C.P.

ON Sept. 1st I was called to attend Mrs. F——, wife of a labourer, in her fifth confinement. The patient, though of small stature, was well built, with a normal pelvis. On making an examination, I found a large bag of membranes projecting half down the vagina through the partially dilated

os uteri. Within the liquor amnii I distinctly made out a large loop of pulsating umbilical cord. An examination between the pains discovered the vertex presenting within the os. Having unsuccessfully attempted to return the prolapsed funis with the membranes intact, I determined to try manual reposition more fully. Rupturing the membranes, I passed my hand into the vagina, and pushing back the vertex from the os, gradually returned the whole length of cord along the side of the head into the hollow of the nape of the neck, lying above the pubes of the mother, and retaining it there until, a pain coming, the vertex was forced down upon the now almost dilated os. Keeping my hand still within the vagina for some successive pains, and finding no further return of the prolapse, I left the remainder of the labour to nature, when in due course a living full-sized child was born, the cord following the birth of the head and shoulders. Both mother and child are doing well.

This same patient had been attended by me in July, 1883, with her second child. A long loop of the umbilical cord was then prolapsed, but upon my first examination the head was so low down that no reposition was effectual, the result being the birth of a stillborn infant. In her third confinement she was attended by one of my medical *confrères*, and again the cord was prolapsed and not returnable, with the result of another stillborn child. Her first and fourth labours, I gather from her, were natural, though difficult.

An interesting feature in this case, apart from the success of the artificial reposition of the prolapsed funis (which reposition, by the way, was exceedingly easily effected), is that three out of five pregnancies resulted in prolapse of the cord, which in each case was of unusual length, and not passed round the neck of the infant.

Somersham, Hants.

THE VALUE OF BELLADONNA AND HYOSCYAMUS IN DYSMENORRHŒA.

By JAMES SHAW, M.B. Glas.

DURING the last year I have had occasion to treat several cases of that form of dysmenorrhœa vaguely and variously designated neuralgic or spasmodic, and occurring in young girls, whom it was of course very undesirable to examine. One of these cases was of marked severity, and, as it had continued for about a year, there was considerable nervous prostration. Morphia was the only drug that at all mitigated the suffering, but in consequence of its administration the patient was wretchedly troubled with headache and constipation, and so I was forced to abandon its use. I therefore prescribed the following mixture, one ounce to be taken three times a day, and it acted like a charm: val. belladonnæ, nine minims; val. hyoscyami, two scruples; syr. aurantii, two drachms; water, six ounces. The epoch has now been robbed of its terrors for her. Writing the other day from Germany to her mother, she says the last six months are the only happy ones she has known since the function was established. In the other four cases there was likewise considerable suffering, and in these also complete relief was afforded. I prescribe it to be begun a day before the period is expected, and continued while the pain requires it. The valoids I employ are those manufactured by Messrs. Burroughs, Wellcome, and Co., and for obtaining the characteristic actions of the drugs I know of no preparations that equal them. The old-fashioned tincture, though perhaps a trifle more elegant, is at once feeble, expensive, and unreliable. In the majority of them the spirit is the active ingredient.

Sheerness-on-Sea.

ENLARGEMENT OF THE GENERAL INFIRMARY, LEEDS.—The contemplated extension of this institution is about to be carried out, at an estimated cost of £30,000. An impetus has been given to provide the improvements and enlargement required by a donation from Colonel North of £5000 towards the erection of the building. Of late, subscriptions have rapidly come in, and a sum of over £30,000 has been received. The board of management, in conjunction with the Faculty of the Infirmary, are maturing their plans, which will comprise a children's ward, isolation wards, improved out-patients' rooms, a casualty ward, and new accommodation for the increasing work of the pathological department.

A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Proœmium.

ST. THOMAS'S HOSPITAL.

THREE CASES OF POISONING (RED OXIDE OF MERCURY, CORROSIVE SUBLIMATE, AND DINITROTOLUENE); RECOVERY; REMARKS.

(Under the care of Dr. ORD.)

AMONGST the other duties of the house physician at a large hospital is usually comprised the attendance on casualty cases, including those of poisoning by many and varied substances. There are few occasions in practice in which more depends on skill in rapid diagnosis, which, combined with a good knowledge of toxicology and prompt action, will often eventuate in the saving of life. The annexed cases are examples of such, where severe symptoms followed the swallowing of red oxide of mercury, corrosive sublimate, and of dinitrotoluene. In the two former the symptoms, though of a serious character, present little worthy of comment, but the third deserves special attention, as the symptoms produced by this compound are almost unknown. For the subjoined notes and remarks we are indebted to Mr. H. J. Macevoy, B.Sc., late house physician.

CASE 1. *Poisoning by red oxide of mercury; recovery.*—F. W. R——, aged fifty-one; tailor. Admitted on July 8th, 1887; discharged July 20th. He has enjoyed good health, but drinks a good deal. Is of a reticent disposition. It appears that shortly after coming home at midnight on July 7th, being somewhat drunk (according to the wife's account), he swallowed the contents of a small packet which he took out of his pocket. An emetic was administered without effect, and he was brought to the hospital in a cab, being apparently unable to walk.

On admission at 2 A.M., the man was in an unconscious condition, and vomiting. Pupils of average size, equal, and inactive to light. Face and hands cold and bathed in sweat. Pulse weak, not abnormally rapid. There were traces of a reddish powder on his beard, chin, and shirt resembling that found in a small packet (referred to above) brought up by a policeman. Does not answer questions put to him or put out his tongue, but keeps his teeth clenched. There is otherwise general muscular relaxation, and his evacuations are passed under him. The stomach was washed out with the stomach-pump. The vomit consisted of a watery fluid containing mucus, and holding a red powder in suspension; no blood. The red powder, subsequently examined by Dr. Bernays, turned out to be red oxide of mercury, of which the patient swallowed about a teaspoonful.

July 8th.—11 A.M.: The patient was ordered milk, lime-water, and eggs, beaten up, to be taken frequently in small quantities, but has kept very little down (vomit contains no powder or blood). He still takes no notice of questions put to him, but his pupils now act to light. Bowels have been opened twice, the first motion consisting of loose fæcal matter with mucus; the second motion is fluid and greenish, contains very little fæcal matter, but mucus and streaks of blood.—4 P.M.: Patient has been conscious for the last two hours; apparently cannot protrude his tongue beyond his teeth. He complains of pain in the epigastrium and tenderness, and also of cramps in the legs. On examination the abdomen is rigid in the upper part, and slightly distended. Pulse regular, fair.

9th.—Patient is quiet, and feels better. Still occasional vomiting and diarrhœa, and the abdomen is rigid in the epigastric region and tender. No particular tenderness of gums; no salivation. He gradually improved after this, the vomiting and diarrhœa ceased, and he left the hospital quite well.

CASE 2. *Poisoning by corrosive sublimate; recovery.*—W. B——, aged forty-nine; surgical instrument maker. Admitted Aug. 31st; discharged Sept. 7th, 1887. Has had no serious illness, but suffered for about six years from

sciatica. He has drunk pretty heavily for some years, mostly ale. Has had domestic troubles, and had been out of work for a few months up to three weeks previously. He had been depressed a good deal for a week, and at about 10 P.M. on Aug. 30th, being under the influence of alcohol, he swallowed a small lump of corrosive sublimate (as determined by chemical analysis and subsequent confession of the patient). He was then brought to the hospital.

When seen after his admission at 12 midnight, the man was sitting up, quite conscious, and answering questions rationally. He vomited a greenish mucous fluid (without blood), and complained of burning in his throat, along the gullet, and in the stomach. Pulse regular, 100; skin perspiring; pupils equal; tongue slightly coated with white fur; back of throat congested; no erosion. Twenty grains of sulphate of zinc, and milk with white of egg beaten up, were given him. When seen in bed half an hour later, the extremities were cold, the pulse was 120, and he had been sick (nothing special in vomit). Complained a good deal of pain and constriction at the throat, and pain along the œsophagus and in the epigastrium.

Aug. 31st.—The patient spent a fairly quiet night, but slept indifferently. Still complains of pain as before. Has vomited four times, the vomit consisting of greenish fluid—i.e., bile-stained—and mucus. Bowels opened twice, motions consisting of greenish fluid, with a little fæcal matter, and small flakes of mucus with blood. No marked epigastric tenderness. Pulse 96. Very thirsty. Gums are a little tender, but no salivation. Urine passed without trouble. Ordered milk, the white of six eggs, and lime-water.

Sept. 1st.—The patient slept better last night after taking forty grains of bromide of potassium; but still complains of great burning and tightness in the throat, and pain in the epigastrium. Occasional vomiting of bile-stained mucous fluid. Bowels altogether opened eleven times since admission, the motions being liquid, bile-stained, and containing small fæcal lumps with mucus and blood. No albumen in the urine. Temperature 100°. Mouth dry; tongue coated with white fur. Ordered a mixture composed of ten grains of bicarbonate of potash, twenty grains of subnitrate of bismuth, and three minims of dilute hydrocyanic acid, to one ounce of peppermint water, to be taken three times a day; also bread-and-milk, and extra milk to drink.

2nd.—Pain less; still thirsty. Has vomited several times since yesterday. Temperature 97°; pulse 84. Bowels opened twice.

3rd.—Vomiting less. Bowels not opened since yesterday. Still complains of pain in epigastrium and thirst. Gums sore, but no salivation.

4th.—Has had three loose stools during the last twenty-four hours. Ten minims of tincture of opium to be added to the mixture of Sept. 1st. Fish diet ordered.

7th.—No pain in epigastrium. Slight soreness of gums. Vomited yesterday morning and this morning; but he has been subject to this on and off for the last two years. Bowels not opened since Sept. 5th, when they were opened once. Feels well, and anxious to go home.

CASE 3. *Poisoning by dinitrotoluene; recovery.*—A. L——, aged three years. Admitted July 9th; discharged July 13th. Previous history good. On July 8th, at 7 P.M., the child picked up a small bit of a chemical salt, which he mistook for a sweet (so the mother says), and began sucking it; said to be the size of a pea. As a result of chemical analysis by Dr. Bernays, and on inquiry from the manufacturers of this salt (from whom the father of the child bought casks which contained the salt) this turned out to be commercial meta-dinitrotoluene, which is employed in the manufacture of Bismarck brown. The mother says that within a quarter of an hour or twenty minutes of swallowing the salt the child foamed at the mouth, became black in the face, and was convulsed.

On admission at 8 P.M., the patient, a well-nourished child, was in an unconscious condition, with most intense cyanosis. He was said to have swallowed a small bit of crystalline substance ("about the size of a pea"), part of which was brought up by the mother for analysis. When first seen he lay like a log on the couch, with complete relaxation of muscles, rapid shallow breathing, very cold surface and extremities, and rapid pulse. A few minutes later the breathing became slower, and apparently also the pulse. Pupils moderately dilated, equal, not acting to light. Artificial respiration was resorted to, cold wet towels flapped about the face and chest, fifteen minims of ether injected subcutaneously, and fifteen minims each of aromatic spirits of ammonia and spirits of ether given by the mouth. This increased the number of heart beats, and the child cried out. When artificial respiration was abandoned (after ten minutes) the child relapsed into its former state, and breathed slowly and irregularly. The breathing becoming no worse, the child was put to bed, the surface of the body rubbed, then blankets wrapped round it, hot bottles placed to the feet, and brandy in teaspoonfuls ordered to be given by the mouth, which the child swallowed. No loss of control over evacuations.—9 P.M.: The child has just had an epileptiform attack, beginning with a loud cry, followed by clenching of the hands, with flexion at the elbow joints and approximation of the arms to the side; the legs and feet extended. The spasms are tonic. Eyes widely opened, and the pupils fixed and dilated. After the fit the breathing became rapid (45 per minute); pulse 144; surface bathed in sweat; temperature 97·4°. — 11 P.M.: Since 9 o'clock the child has had three fits similar to the one above described; but there was no cry during the last, which occurred at 10.50 P.M. During the attack the pupils were very widely dilated (equal). After the attack the pupils became about half the size. Respiration 56; pulse 160; surface, as before, bathed in sweat. The child is as much cyanosed as on admission, unconscious, and the pupils are fixed. Just swallows brandy when placed on the back of the tongue.

July 9th.—After about 2 A.M. the lividity gradually disappeared (the lips remaining blue longest apparently), and at 3 o'clock the child spoke. No vomiting. Temperature 99·8°.—11 A.M.: The child is now apparently quite well, can talk, and appreciate all that goes on. Takes milk readily. Pulse 132. Nothing abnormal detected in lungs or heart. He at first passed urine in bed; that subsequently saved did not give the reactions of carbolic acid or aniline; no sugar; no albumen.

The recovery was uninterrupted, and the child left quite well on the 13th.

Remarks by Mr. MACEVOY.—The first two cases call for no particular comment. The symptoms were such as are generally observed in these cases, and an early acquaintance with the nature of the poison, coupled with the circumstance that the patients were brought to the hospital soon after swallowing the poison, gave one the opportunity of administering appropriate and prompt treatment. The absence of signs of corrosive action on the mucous membrane of the mouth, tongue, and throat is worthy of note; this is, no doubt, to be explained by the fact that the patient swallowed a small lump rapidly. Salivation was absent, as is not uncommonly the case in acute poisoning by corrosive sublimate. The third case—poisoning by dinitrotoluene—is, so far as I am aware, unique. The symptoms resemble very much those which are described in poisoning by nitro-benzole and by aniline, and the most marked symptom was the intense cyanosis, equalling that seen in fatal asphyxia, and of a somewhat different hue. The occurrence of convulsions is also very interesting. The fact that only a small amount of the poison was swallowed and the urgency of the respiratory difficulty made one abandon the idea of using the stomach-pump, so that treatment was limited to purely combating the dangerous symptoms. The absence of any after-effect, considering the serious nature of the immediate poisonous effects, is, I think, a point of interest. By the next morning the child was sitting up in bed quite lively, and as though nothing had happened. With the exception that the insensibility was not immediate, and that the cyanosis came on gradually after a few minutes (and was probably more intense than in cyanide poisoning), the appearance of the child suggested poisoning by cyanide; and this suspicion was the first that crossed my mind. I dismissed the idea on finding that the child had taken the salt one hour before, and the appearance of the salt did not resemble any of the common cyanides.

NORTH LONDON HOSPITAL FOR CONSUMPTION.

CASE OF PYO-THORAX; PARACENTESIS; RECOVERY; REMARKS.

(Under the care of Dr. EDWARD SQUIRE.)

FOR the notes of the following case we are indebted to Mr. P. M. O'Brian, late resident medical officer.

C. D——, a girl aged seventeen years, was admitted on Nov. 17th, 1887. The family history was stated to be good.

Both parents are living and healthy, and the patient is their eldest child. The personal history was also good. Her only illnesses had been scarlet fever with dropsy when twelve years old, and a sore leg from injury. Latterly she had been a ward-maid at the Temperance Hospital, and had been in indifferent health. She had held that position for eight months, but had to give it up about a month before admission on account of continued bad health. She then returned to her home in Hampstead with a sore throat, and had been at home about a week when the present attack began. The present illness commenced three weeks before admission with a distinct rigor, purging, and vomiting. Severe pain in the right side of the chest was complained of, with dyspnœa and cough, but no expectoration. The patient continued very ill, and on admission seemed to be in a very precarious state, being unable to stand, indeed scarcely able to speak. There was still severe pain in the side, and frequent cough, with slight expectoration which presented streaks of blood. The breathing was very rapid (56 to 60 per minute), the movements of the alæ nasi being very noticeable. The face was flushed; eyes sparkling; tongue moist and furred. The pulse was rapid, being 144 beats in the minute, full and soft. The bowels were free. Urine scanty; acid; sp. gr. 1022; no albumen. The temperature, which was 102·4° on admission, fell to 99·4° on the following morning. There had been free pirspiration for the first time on the night before admission.

State on admission.—The patient is a small dark complexioned young woman, with an anxious expression of countenance. The face is long and narrow, flushed at present, and covered with cold perspiration. There is much distress on attempting to speak. The lips are dry. The fingers tapering and clubbed at the ends, with a slow return of colour after pressing the nails. The chest is well formed and covered, and, with the exception of slight bulging of the right side in the upper part, no inequality is noticeable. In the right axilla some dilated cutaneous veins are seen. There is hardly any movement in the lower half of the right side, and dulness of a wooden character exists from the level of the third rib downwards when the patient is in the sitting posture, and from the fourth rib when in the recumbent position. About this level a sound resembling the *bruit de pot fêlé* is heard on percussion in front. Breathing is harsh here also, but over the dull area breath and voice sounds are absent; there is no ægophony, and no vocal fremitus can be detected. On the left side the respiratory movements are good. The percussion note on this side is also good, and the breath sounds harsh on auscultation. The lower border of the liver is depressed about an inch. The heart sounds are weak and the beat rapid. There are no murmurs. The apex beats one inch below the nipple, and a quarter of an inch outside the nipple line, vertical.

A stimulant mixture and diet were ordered, and the side also to be strapped. This gave much relief, and the patient seemed more comfortable. The temperature still kept up, being always highest in the evening, and reaching 103° as its maximum. The pulse also remained about the same, and the respirations were about 56. A cyrtometer tracing of the chest showed the right side to be uniformly enlarged and unaltered in form by expiratory or inspiratory movements. On Nov. 19th, two days after admission, a soft murmur was heard over the third left costal cartilage, and a faint pericardial friction sound was audible over the sternum to the right of this. Three days later the pericardial sound had become very distinct and loud, and was audible all over the cardiac area. On this day (Nov. 22nd) a hypodermic needle was inserted in two places in the right side: the first time in the fifth space in the nipple line, without result; the second time in the back, an inch and a half below the lower angle of the scapula, this time drawing off a syringeful of purulent fluid, slightly tinged with blood. It was decided to remove the fluid by aspiration, and the needle was inserted in the same position as the second exploratory puncture. Only about half an ounce of fluid came away, but this had some influence on the percussion note, the dulness being now less by about three-quarters of an inch, and the patient seemed to breathe with slightly less embarrassment. The pericardial friction sound continued as before, and a thrill was felt on placing the hand over the cardiac area. Breath sounds were still inaudible over the dull area of the right side. The evening temperature was lower for the two days after aspiration than it had been, but then rose as high as before. On Nov. 30th it was noted that the breathing was becoming audible, though distant and feeble, down to the nipple level on the right. The general condition remained much the same. The friction sound over the heart was now very loud and pain was complained of. A blister was applied and relieved the pain, and the sound also appeared to be less intense afterwards. A creaking crepitant sound was heard in the right axilla, which, however, was not persistent, but only occasionally audible. About the mammary region a tubular note was heard with expiration, and the voice sounds were much more clearly conducted. On Dec. 2nd a friction sound was heard in the left axilla, just outside the apex beat, and a dragging pain was complained of at this spot. A blister was applied. The temperature also rose higher than it had been since admission. Three days later, notwithstanding this new complication, the patient's general condition was improving. There was now dulness on the left side below the nipple level. The pericardial sound also began to diminish in intensity, and disappeared during the following week. There was never marked dropsy of the pericardium, the beat of the apex never receded from the chest wall, and there was no increase in the area of cardiac dulness. From this time there was a slow improvement on the right side, accelerated by a second aspiration on Dec. 7th, the needle being inserted about an inch and a half posterior to the previous puncture, and again about half an ounce of purulent fluid was withdrawn. The breath sounds now became audible down to the fifth space in front, but were very distant. At the back they never became distinct below the mid-scapular level, except just after the second aspiration. The percussion resonance also was never clear below this level, but in front an impaired note replaced the previously wooden one. Both in front and behind, above the level of the third rib, whispering pectoriloquy was heard for some days. On the left side a coarse friction sound replaced the scrape first heard. The dulness previously noted became gradually less, but some slight impairment of resonance continued. From this time onwards the patient progressively improved. The temperature fell to the normal by Dec. 20th, and never rose above 99·2° after this. The condition of the chest remained much the same as has been just described, but the patient, at first slowly and then more rapidly, gained flesh. The aspirator needle was inserted into the right side a third time on Dec. 21st, but with a negative result. The patient left the hospital much improved on Feb. 7th, and remains well, going out to work as a needlewoman at the present time (Sept. 1st).

Remarks by Dr. SQUIRE.—This case is of interest in many ways. What strikes one most markedly is the evident progress of the inflammation right across the chest from the right to the left pleura, the pericardium being the medium of transmission. The result also shows that aspiration is a proceeding which may still be employed with advantage in cases of pyo-thorax. In this case there was probably a thin layer of purulent fluid which was removed by the aspirator, and the patient recovered with a thickened pleura, but also with a useful lung. In young patients, I am against recommending free incisions into the pleural cavity for the purpose of draining off the fluid, unless the quantity of the fluid is very great and has persisted for some time. Such openings result in the collapse of the lung of that side, and they remain long (sometimes permanently) patent and discharging. The patient then becomes incapacitated from earning a living, and is in many cases a chronic invalid. Aspiration, on the other hand, gives a fair chance of many years of useful and even active life.

Medical Societies.

CAMBRIDGE MEDICAL SOCIETY.

AT a meeting of this Society on July 13th, Mr. Stear, M.R.C.S., President, in the chair, the following communications were made.

Cerebral Softening and Basic Meningitis.—Dr. BRADBURY read the notes of this case. H. B——, aged twenty-nine, a labourer, married, was admitted into Addenbrooke's Hospital on Dec. 7th, 1887, and died on Feb. 6th, 1888. There was no history of past illness, though the man had never been strong; and no history of syphilis. In March, 1886, he complained of weakness in the right leg, with

symptoms of paralysis of the third left nerve. He attended as an out-patient under Mr. Wherry, who noticed mental dulness, occipital pain, paresis of the right leg, diplopia, external strabismus, ptosis, and dilated pupil on the left side. Vision: Right eye $\frac{6}{12}$, pupil 3½ mm.; left eye $\frac{6}{12}$, pupil 8½ mm. Twelve grains of iodide of potassium were given him three times a day. He improved, but still had weakness of the right leg on May 28th. In July the mental symptoms increased, and there was much weakness of the arms and legs, with some loss of consciousness. The following was his condition when seen: Strongly built man, well nourished. Peculiar smiling expression about face. Talks with slight drawl, and does not always know what he is saying. Left eye shows slight external strabismus; no ptosis; left pupil dilated, and does not react; right normal. Movements of the left side of the face slightly impaired; sensation normal. Tongue protruded in middle line. Complains of vertical headache. Heart and lungs normal. Sensation in arms and legs good, muscular nutrition normal. Knee jerks excessive; ankle clonus well marked on both sides. On the left leg there is a round scar from an old ulcer, but no other scars. Urine acid; sp. gr 1010; containing phosphates. The notes taken were as follows:—Jan. 6th, 1888: Slight convulsive seizure followed by difficulty in articulation; had three similar attacks since. Patient lies in a dull, drowsy state; cheeks blown out with each expiration. Marked ptosis of right eye, pupils very unequal; right small, left medium, both react. Speech coherent, but very indistinct. Pain over right side of head. Clonus of right leg at times without any cause. Superficial reflexes increased on both sides. Slight left facial paralysis.—10th: General condition improved, but marked left facial paralysis, deafness in left ear, and loss of taste on left half of tongue.—31st: During last few days the patient has become less sensible, and moans as if in pain. Rigidity of limbs marked on both sides, and legs drawn up in bed.—Feb. 2nd: More drowsy; pulse feeble. During the last few days there has been ptosis of the right eye with external strabismus and dilated pupil. Tenderness over right side of skull. No obvious optic neuritis.—6th: Rigidity of all the limbs; stupor increasing' and difficulty in swallowing and breathing. He died the same afternoon. The patient was treated constantly with iodide of potassium, taking as much as thirty grains three times a day, during the month of January. The following post-mortem examination was made by Mr. Griffiths:—Dura mater normal. Great accumulation of cerebro-spinal fluid in subarachnoid space and also in lateral ventricles. Right hemisphere depressed towards its centre, convolutions almost obliterated and replaced by smooth, soft-looking tissue. The superior frontal, upper third of ascending frontal, ascending parietal, and occipital convolutions still remained. Left hemisphere generally atrophied. On section the greater part of the white matter of the right hemisphere had disappeared, and in its place there was a large quantity of milky-looking fluid, with shreds of more resisting tissue, bloodvessels mainly, traversing it. The softening could be traced down to the anterior part of the internal capsule. The white substance of the right crus cerebri was much diminished. No changes were detectable to the naked eye in the pons, medulla, and cord. At the base there was some chronic meningitis in the intra-peduncular space, and this extended backwards and downwards to the region of the cranial nerves arising from the pons and medulla. The vessels at the base were thickened and cord-like, but the right middle cerebral was patent, although small. The basilar artery was small, and contained a partially organised thrombus. In the medulla the right pyramid was small and sclerosed, and also the corresponding direct and crossed pyramidal tracts. All the other organs were normal.

Pigmentation and other Cutaneous Affections in Graves' Disease.—Mr. F. W. BURTON read a paper on this subject. He said there had been lately in the hospital two interesting cases of exophthalmic goitre, one remarkable for presenting with the symptoms of Graves' disease many of those of Addison's also; the second—besides other things—in that it occurred in a man, in which sex the disease only occurs once to five times in women. Mr. Burton thought there was no doubt that exophthalmic goitre was particularly common in this part of the country, a fact due very likely to the prevalence here of anæmia and rheumatic fever, both of which diseases were thought to predispose to exophthalmic goitre. The first patient was a married woman, aged forty-nine, a native of Fenstanton, who was admitted into Addenbrooke's Hospital on Jan. 27th, under Dr. Latham. Her father died of an affection somewhat allied to Graves' disease—viz., diabetes. The mother and her family were consumptive—a disease present in half the cases of Addison's. The patient had rheumatic fever twelve years ago. (Dr. S. West found that of thirty-eight cases of exophthalmic goitre eight were rheumatic.) Her illness began with indefinite symptoms of dyspepsia; these became worse, and she was unable to take anything but liquid food, frequently retching after this. Palpitation then began to trouble her; she became nervous and so weak that she could not walk alone; her friends meanwhile noticed that her skin was getting darker. On admission she was very weak and thin, in the usual excited and tremulous condition met with in the malady. There was no exophthalmos, but Stellwag's and von Graefe's signs were markedly present, the thyroid was a little enlarged, the right lobe especially so, to about the size of a walnut. The pulse varied from 116 to 130, was of good size, but very soft and occasionally irregular in force. There was great pulsation of the abdominal aorta along its whole course, of such force that it could be seen through the bedclothes. The patient complained greatly of palpitation of the heart, at the base of which a systolic harsh murmur developed during her stay in the hospital. She was treated by complete rest and by careful diet, but what produced most striking benefit was the administration of tincture of belladonna. This she has taken for upwards of three months in five-minim doses. She still, however, shows traces of her pigmented condition, the pulse ranges between 90 and 103, the thyroid has not much diminished, and there remains a trace of von Graefe's sign. What especially attracted attention in this case was the pigmentation; it was almost exactly the tint of dirty skin, and was most marked about the face, neck, axilla, back—especially at the waist,—the genitals, below the knees where the garters pressed, and below a ring on her finger. There was no glycosuria, but Mr. Wilde, of the Physiological Laboratory, was kind enough to examine the urine for the pigment described as being present by Dr. MacMunn in Addison's disease. The precipitate, obtained from the urine by acetate of lead, was dissolved in absolute alcohol, acidulated by sulphuric acid; and this solution, examined by the spectroscope, showed a dark band from 48—50, the position described by Dr. MacMunn as characteristic of acid hæmatoporphyrin; the same fluid rendered alkaline assumed a greenish fluorescence, and by the spectroscope answered to the characters of alkaline solutions of hæmatoporphyrin. Mr. Burton said the special interest of this case lay in the coexistence of exophthalmic goitre and some of the symptoms of Addison's disease—viz., pigmentation, stomach trouble, and great debility. In the *British Medical Journal* of last year Dr. Drummond reported six cases of this combination of symptoms; in the *Ophthalmic Review* Dr. Carrington described the case of a woman, some of whose relatives had died of phthisis, who at the beginning of her illness had vomited, and was much exhausted, with a small, feeble pulse. Dr. S. West, from an experience of thirty-eight cases of Graves' disease, had seen pigmentation once. On looking through the old hospital notes, Mr. Burton found in the case of a girl, under Dr. Mac Alister, it was observed that her skin was very brown where exposed to the sun. Dr. Gowers mentions a case in which the exophthalmos disappeared, but was succeeded by pigmentation of the skin. Mr. Burton had recently heard of six other cases of Graves' disease presenting pigmentation. He thought that the opposite condition of leucoderma was a less common occurrence in Graves' disease, though its occasional presence is mentioned by Trousseau and Raynaud, and he had seen one case where, together with the more classical symptoms of exophthalmic goitre, there was leucoderma on both arms and a blotch of enlarged capillaries on one cheek. There was in the hospital at the same time as the woman whose notes had been read a man, under Dr. Mac Alister, aged thirty-four, and who for five months had suffered from alternating sweats and cold chills, then from palpitation and dyspnœa, with great nervousness. No cause could be found for his illness, unless we allow that family troubles consisting "of a birth one year and a death the next" were sufficiently abnormal to be reckoned an exciting cause. On admission it was noted that the eyes were prominent, that he easily flushed and sweated, that the thyroid was slightly enlarged, and the pulse seldom under 116. The heart's action was tumultuous, the area of dulness enlarged,

and the first sound was followed by a short blowing murmur. Von Graefe's sign was marked, Stellwag's absent. In addition to these symptoms, the patient had glycosuria, which disappeared after a week, and slight jaundice, with bile-stained urine which lasted three days; he had also an erythematous blush and slight œdema of both ankles, unaccompanied by pain or other sign of joint affection. He likewise presented that extremely coarse jerky tremor, on movement especially, described by Dr. Gowers as a symptom of this disease. Dr. Macalister treated this patient with rest and increasing doses of liquor atropiæ sulphatis, beginning with doses of two minims, but the only slight improvement that followed seems to tally with Dr. Drummond's observation, that glycosuria is one of the more unfavourable symptoms of exophthalmic goitre. Mr. Burton said that the especial points in this case he wished to draw attention to were the temporary jaundice, the erythema and œdema of the ankles, and the ready sweating and flushing. A third case attending Mr. Wherry as an out-patient, by whose kindness Mr. Burton was allowed to mention it, had palpitation, slightly enlarged thyroid, and von Graefe's and Stellwag's signs, together with a cutaneous affection he had not found elsewhere noted—viz., urticaria—which comes out every morning, and, after lasting an hour or two and causing the patient great annoyance by its itching, disappears, thus corresponding with the form of urticaria thought to depend on nervous, probablp vaso-motor, influence. Mr. Burton also found the following cutaneous disorders recorded as having occurred in Graves' disease. Dr. Cheadle, in the St. George's Hospital Reports, mentions a case complicated by marked acne rosacea, due, he supposes, to congestion of the skin from general vascular dilatation; Dr. Burney Yeo, a case with loss of hair of the eyebrows and lids; and Leibe, a case with sclerema of the skin of the face and backs of the hands; while Charcot, in the *Gazette des Hôpitaux* for 1885, makes the observation that in this disease the electrical resistance of the skin is much diminished. Mr. Burton concluded by attempting to show that these symptoms could all best be explained by the accepted pathology of exophthalmic goitre—a sympathetic neurosis.

Aural Cases.—Mr. DEIGHTON read notes of two cases. One in which a purulent discharge had existed for upwards of twenty years, and where there was almost complete loss of the membrana tympani. In this case, after the otorrhœa was cured, entire regeneration of the membrane took place. The second case was one of abscess in the mastoid cells, with high fever and delirium, in which perforation of the mastoid cells was performed with a successful result. Mr. Deighton remarked on the frequent fatal consequences of neglected ear disease, and insisted on the importance of a knowledge of at least the elements of otology by all medical men. This, he maintained, could only be obtained by it being made compulsory that all medical students should show a fair knowledge of aural disease before they are granted their diplomas.

Reviews and Notices of Books.

Fever: a Clinical Study. By T. J. MACLAGAN, M.D. London: J. & A. Churchill. 1888.

So much attention has of late been devoted to the elucidation of the febrile process that we may fairly hope to arrive at an explanation of its phenomena which shall satisfy all parties. One reason, perhaps, for the state of uncertainty respecting its problems is that fever has seldom been studied with sufficient breadth of view. Its most prominent feature—abnormal excess of body heat—has been exhaustively scrutinised, and experimentation has almost wholly been restricted to it. All other symptoms and lesions of the febrile state have been considered subsidiary to this, the essential and constant symptom. Naturally, therefore, much has been left to the physiologist to determine what is the mechanism whereby the temperature of the body, which in health remains so constant under most varying external and internal conditions, can in disease be so greatly deranged. The monograph before us shows the subject as it presents itself to the mind of a practical physician, who is not only well informed of all that has been advanced by others, but who holds very definite and clear opinions of his own, which he expounds in an authoritative manner. One cannot peruse this work—which is one well-sustained argument in support of the doctrines advanced—without seeing that its author has a considerable grasp of the subject, and that he widens the view considerably beyond the limits mostly assigned to it; so that, in spite of some obvious flights of scientific imagination, he has succeeded in exhibiting the question in as thorough and complete a manner as has hitherto been attempted.

Dealing, in the first place, with the theory of fever, he assumes the position that heat must, like urea and carbonic acid, be regarded as an excretory product, which may be formed and eliminated either by increased metabolism, an exaggeration of the normal process, or by the influence of the nervous system through relaxation of the normal inhibition that restrains the heat-producing process. Of these two views—the metabolic and neurotic—he himself inclines to the former; but at the same time he is careful to point out that they are not antagonistic doctrines. Indeed, he is bound himself to resort to the neurotic theory in explanation of hyperpyrexia, although he finds it inadequate for that of pyrexia. He discusses the neurotic theory with impartiality, and rightly avers that such experiments as those of Wood upon the effects of artificially heating the body are hardly applicable as explanations of the febrile process in man. Dr. Macalister's ingenious exposition of the nervous mechanism in its threefold aspect—thermotaxic, thermogenic, and thermolytic—is held to be too strictly physiological, and to neglect the etiological side of the question, which the physician has ever before him. "To say that heat could be directly brought about by stimulation of a heat-producing centre, without increased tissue change, would be to place heat as a product on the same level and in the same category as volition and emotion, which is absurd" (page 23). Nevertheless, Dr. Macalister's views have gone far to bring into harmony the facts of pyrexia with those of hyperpyrexia, as well as the temperature disturbances that obviously own a neurotic origin. We are by no means so sure as Dr. Maclagan is that the neurotic theory is inadequate, or that it of necessity implies a disregard of the processes of tissue metabolism. It is not antagonistic to the metabolic theory, repeats Dr. Maclagan; might we not rather say that it complements the latter, which may well be subsidiary to it. The metabolic theory is amply discussed by our author from all points of view. He refers the tissue changes to the action of the contagium, which requires material for its reproduction within the system. It finds this in the store-albumen—probably the constructive, rather than the retrogressive,—and hence the wasting of the nitrogenous tissues, the increased consumption of water, and the heightened elimination of urea and of potash salts. In brief, of the two hypotheses, which is the more probable? Is fever due to the action of the poison (contagium) on the thermal nervous mechanism, or is it due to the direct operation of the contagium vivum on the tissues of the body? Dr. Macalister, it may be remembered, declined to enter into the question of etiology, but it is only fair that the hypothesis he propounds should be supplemented by the introduction of the agent which plays so large a part in Dr. Maclagan's argument.

The book before us is not, however, by any means confined to the above questions. Dr. Maclagan discusses in turn the symptoms of fever, especially the nervous symptoms—as rigor, headache, delirium, convulsions, and coma, as well as typhoid symptoms; referring these to the impaired nutrition due to the reproduction of the contagium particles; and so assimilating these symptoms with the pyrexia, not as results of the latter, but as concomitants due to the invasion of the organism by the same agent. He has also some interesting sections upon post-mortem appearances in fever, which are brought under the same influence. From this he diverges to discuss the mode of action of con-

tagia, and their relations to the specific local lesions. In some highly interesting chapters, he contrasts the operation of the specific viruses with that of ordinary poisons, and discusses the different degrees of contagiousness of the specific fevers. He finds in the local lesions evidence of the presence in the body of the "second factor" essential to the propagation of the contagium, and attributes the varying severity of attacks, the cessation of fever, the immunity from second attacks, and other characteristics of these diseases, in a certain measure, to the amount and activity of the contagium, but perhaps in greater degree to the amount of this hypothetical "second factor," and its exhaustion. The subject is well reasoned, as are the arguments in which he shows that relapsing fever is an exception to the general rule. For in that disease he maintains there is no evidence of a "second factor" other than in the blood. Lastly, he discusses the treatment of fever, dealing first with specific fevers, next with malarial fevers and rheumatic fevers, and then with the action of febrifuge remedies. As regards cold, he maintains that "its curing hyperpyrexia is no proof that cold can cure pyrexia," and he does not think the statistics adduced in support of the routine use of cold baths in typhoid fever to be of much value. At the same time, he admits that cold is beneficial by stimulating inhibition. He says: "In all cases of fever in which the temperature tends to rise, or in which the patient is restless or sleepless, cold or tepid sponging is of service" (page 158); and that "when the action and use of cold is better understood, as it some day will be, when it takes its proper place as a stimulant of inhibition, and not as a direct depresser of function, we shall probably use it more freely than we do now" (page 164)—an admission which those who remember the author's former opposition to this antipyretic measure will be pleased to note. We may well leave it to our readers to pursue Dr. Maclagan's arguments for themselves. We can promise them some pleasant reading, and an acquaintance with doctrines which have at least the merit of originality, besides being evidently the outcome of a close study of the subject.

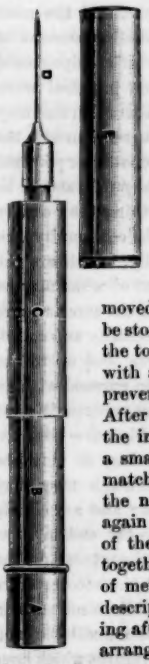
Holden's Human Osteology. Edited by Professor CHARLES STEWART and Mr. R. W. REID. Seventh Edition. London: J. & A. Churchill.

WE gladly welcome a new edition of this well-known work on human osteology, and can cordially recommend it to those about to commence the study of anatomy. To the student who is introduced for the first time to the subject, the work is presented in an attractive form, and the custom adopted in it of using coloured lines (red for the origins or more fixed ends, and blue for the insertions or more movable ones) to indicate the attachments of the muscles is one which not only attracts the eye, but assists in impressing the exact attachment of muscles to a particular bone, or part of a bone, more firmly on the mind of the learner. It will be found that great care has been exercised in accurately placing these lines, and the student who, remembering this, makes himself master of their exact situation on a particular bone has obtained possession of a fact which will stand him in good stead during the years to come. Of course it is not intended that these illustrations should take the place of close and accurate study of the bones themselves, but if the student, holding the bone in his hand, carefully reads the text, and compares the illustration with the bone, possibly marking it to ensure greater accuracy, he will advance rapidly and surely in his work. In the present edition a somewhat more detailed description of the bones has been given by Mr. R. W. Reid, who is well known to be an accurate observer and skilled anatomist. A few alterations have been made in the account of the minute structure and development of bone. Some of the plates have been withdrawn, and several new ones added. The descriptions of the larynx and soft parts of the ear have been omitted, the editors rightly thinking that they belonged rather to a work dealing with general anatomy than to one devoted exclusively to osteology. For a similar reason the description of the interossei muscles is left out. The references to specimens in the Comparative Anatomy Department of the Museum of the Royal College of Surgeons have been corrected according to changes in the Museum, under the charge of Prof. Stewart, to whom the book is also indebted, among other things, for excellent sketches of the parts composing the middle ear in the dry state. The work has been most carefully edited, and will undoubtedly continue to meet with great and merited success.

New Inventions.

NEW HYPODERMIC SYRINGE.

THIS newly patented syringe has been made in accordance with principles laid down by Mr. Lawson Tait. The following advantages are claimed for it: (1) it is is portable and cheap; (2) there is no leather or other kind of piston to get out of order by becoming dry; (3) there is no glass barrel to be broken, and (4) if the soluble hypodermic tablets are carried, there is no need for the arrangement of a graduated barrel or piston. The syringe consists of three parts: the outer and lower, marked E, consists of a small tubular projection for the needle point, to be used as a boiler for dissolving the pellet by the aid of a match, candle, or gas flame. The pellet is put in it with about twelve or fourteen drops of water and dissolved. The piston B is then removed from cylinder C; the latter is held with the needle downwards and the contents of the boiler are poured into it; the piston is then smeared with oil or vaseline, replaced in the cylinder, and, with the syringe reversed so as to bring the needle upwards, the piston is slowly pressed until the air is forced out of the cylinder and the solution begins to come out of the needle. It is then used in the usual manner. The piston B has a secondary use, for the screw-cap A at the top being removed, there is a place in which the pellets may be stored, a piece of cotton wool being placed at the top, the pellets then placed in and covered with a second piece of cotton wool, so as to prevent their being broken up by attrition. After use the piston should be wiped dry, and the inside of the cylinder dried by means of a small piece of cotton wool on the end of a match; a drop of oil is then to be drawn through the needle into the cylinder and passed out again; the point is to be wiped dry by means of the cotton wool, and the instrument put together. The whole apparatus is composed of metal, and, as will be seen from the above description, requires careful drying and cleansing after use. Much ingenuity is shown in the arrangement of the syringe, and it may be found of service in cases where the necessity for its employment is not frequent; but we do not think that it will find favour with those who are familiar with the use of the conveniently graduated barrel and leather piston, with which, to commence the operation, it is only necessary to draw a ready-made solution into the syringe to the required amounts. Again, the needle is fixed, and cannot be removed for cleaning or replaced by a smaller one. It is sold by Messrs. Arnold and Sons, of West Smithfield, London.



THE LANCET.

LONDON: SATURDAY, SEPTEMBER 22, 1888.

THE treatment of the insane is a subject that penetrates our social and domestic life to the very core. We have long since ceased to smother the insane as incarnations of the devil or to burn them as witches; their chains have been struck off, and they are no longer herded together in gaols and outhouses. Palatial abodes have been constructed for them; much pains are taken to render the needful curtailment of personal liberty as brief and as little irksome as possible; and unceasing efforts are made to ensure their bodily comfort in diet and in clothing, just as the recreation of their minds is studiously catered for by both out-door and in-door pastimes, amusements, and entertainments. Yet we are told there is room for improvement; just as if any human effort could ever be called perfect under all circumstances.

Looking at the question in its broadest sense, it will be found that there are three great desiderata in the far-reaching problem of the treatment of the insane. 1. That the insane should be conducted to the recovery of their proper senses by the quickest, the most efficacious, and the most kindly means. 2. That the greatest possible amount of *teaching* as to what insanity is in all its relationships should be got out of the experience derivable from practical work in connexion with the insane; a kind of instruction that may be gained and utilised by all who come into relation with the insane, whether from a medical, official, domestic, or personal point of view. 3. That the confidence of the public should be established in the assurance that everything that can be done is being done for those members of the community who are insane, whether actually or potentially. Such are the issues upon which depends the attainment of what may be called the *summum bonum* in the matter of the care and cure of the insane. Taking these issues individually and collectively, are we able to say that, in our time and up to our lights, the attainment of this end has been pursued with an amount of success commensurate with the opportunities at our command, or such as might reasonably have been expected of us? In discussing this question, it must be observed that the issues involved, although they may each be taken independently, hang upon and are closely interwoven with each other in relation to the end in view. We think it may fairly be assumed that the returns on the first and third issues, those dealing with the recovery-rate among the insane, and the state of public confidence in lunacy matters generally, are on the whole creditable, and that they are more satisfactory than those returns which have reference to the present state of our knowledge as to what insanity is. No doubt our greater knowledge and experience of the insane are the means which enable the belief to be entertained that a remarkable advance has been made in the treatment and management of them, and that, as a consequence, the public confidence has largely risen. But we have, nevertheless, a consciousness that we are leaving to posterity a heavy legacy of exploratory work with regard to the mysterious activities of cerebral and nerve matter and to the complex and intricate manifestations of mind in health and in disease. We have to acknowledge that the nature of the subtle processes going on at the point of contact between matter and mind is still unfathomed.

But although we are disposed to speak in a congratulatory strain upon the present methods of treating and managing the insane, we do not, ostrich-like, bury our heads and feel free from assault. We candidly admit that there is much yet to be done. The writer of a leading article in *The Times* of August 16th speaks as follows:—

"The places in which the insane are received are too much asylums and too little hospitals. The reform which is now chiefly wanted is to provide institutions like Bedlam, strictly hospitals for the treatment of the insane at the first appearance of the malady, hospitals out of which they may be drafted into asylums as soon as they were manifestly incurable. Such hospitals should have visiting as well as resident physicians, and the growth of knowledge about insanity should be encouraged by the same means which have been found so successful in the case of other diseases. Until this, or something like this, is carried into effect, it is only too probable that insanity will continue to increase, in spite of all that can be done to seclude and protect its victims."

We ourselves have often protested against the system of huge asylums, in which the aggregation of large numbers of chronic cases must prevent the possibility of the treatment which, call it "hospital" or call it "asylum," is desirable in the interest of the patients. The only real suggestion, however, made in the above quotation is the addition of visiting physicians to an asylum staff—a suggestion which in itself is proper enough. If the writer, addressing the general public, wished to discredit the asylum system in favour of a hospital system (whatever that may be taken to mean), it is a matter for regret that (apart from the exception referred to) he contented himself with setting out his scheme in a vague phraseology of statement and assertion that would apply to the existing asylum system, or to any other reasonably conceived system. And it would have been more considerate, not to say helpful, if, under the circumstances, he had taken care to tell, in clear language, what changes, administrative or otherwise, his "reform" involved or demanded. Is an insane person to be treated on the "hospital" system without a certificate of insanity, and, if so, on what grounds or by what right is he to be detained against his will? Does the writer in *The Times* expect that lunatics (who admittedly do many strange things, but who certainly do not readily own to the "*soft*" impeachment) will voluntarily go to a hospital and ask to be detained there against their will? If a lunatic is taken to what is called a hospital on a certificate of insanity, the presence and the advice of a visiting physician will not prevent the treatment being asylum treatment.

In the same article the writer says: "The truth is that the progress of knowledge more and more indicates that insanity is simply a disease subject to the same physical conditions as other diseases." If this quasi-definition of insanity be true, there is nothing to prevent the lunatic from driving to the nearest hospital for treatment just as the patient suffering from colic or renal

disease does. What further use is there for the trouble-giving certificate of insanity, or for the costly asylum with all its special and recreative appliances? Unfortunately, insanity is not simply "a disease subject to the same physical conditions as other diseases." It is a disease of this sort, no doubt; but it is, and it means, a great deal more. The hospital patient may be unfit to carry on his business, he may become a useless and sighing or irritable unit in the household, and he may become an inconvenience to himself, all on account of his physical infirmity. But what about the insane person? He is not only incapable of carrying on his ordinary duties; but, by reason of his disease, he rebels and fights against his own best interests; he is apt to bring the tranquillity of family life into a state of disorder and confusion; he is a source of anxiety to his relatives and neighbours; and he finally becomes an antagonistic force, with an active power for mischief, in the midst of the community, a danger to himself or to others.

The right and proper treatment of the insane implies an investigation into, and an observation of, insanity from all standpoints; and we must regard a pathology which urges that it is *nothing* more than a disease like other diseases as a dangerous basis for treatment and management; for if we begin to deal with the insane on this footing, we are almost sure to find to our cost that it is a disease whose peculiarity is that it is so unlike other diseases.

FROM time to time a case of mismanagement in the treatment of disease occurs to disturb the vexed question of counter-prescribing in its relation to medical practice. This custom, indeed, is itself an evil which cannot be as easily cured as prescribed for, and which tends to reappear in spite of every remedy, as if it were some morbid parasite indigenous to the constitution of medicine. Space will not allow us to suggest a radical cure for an ailment so inveterate; but a short comparison of its various aspects, and a few hints as to prevention, will not be out of place. It is evidently as much a matter of public as of medical interest. A great many private persons who know nothing, or next to nothing, of disease are quite ready on occasion to undertake the treatment of what they take to be their minor illnesses, or, if they seek advice, it is to the chemist that they go, as if resolved to discover, not the source of their trouble, but if possible some drug that will reach and remove this unknown cause. They are willingly forgetful that the trifling ache may herald the attack of a serious illness in which delay is dangerous, or that the drug to which they vaguely turn may itself do harm. They care as little that their action places the chemist in a false and even an illegal position, since his licence does not extend to the treatment of disease. To a certain extent, the possible evil consequences of this practice are certainly counteracted by the caution of chemists in dealing with the charge thus thrust upon them, also by legal restrictions—such, for example, as those imposed by the Sale of Poisons Act. It would be impossible, however, to control effectually such indiscretions on the part of the public by legal measures. The law could only act with effect from the direction of the chemist, by obliging him to concede to the practitioner that immunity from interference which he himself obtains at the hands of other tradesmen. This brings us to consider the position of the second factor in this problem. We are not unmindful of the difficulties of the chemist's position. There can be no doubt that a large amount of counter-prescribing is almost forced upon him. He is constantly called upon at a moment's notice to administer to some petty ailment, or to refuse his help at the risk of offending a customer, without, it may be, convincing him of his own true position in the matter; and his trade also is in these days encroached upon by a legion of patent medicine makers and store dispensers, without mentioning those medical men who, in accordance with a still prevalent custom, dispense their own prescriptions. His temptation to retaliate, by reaping when he can in his neighbour's field, is, therefore, no light one, though this does not of course excuse its illegality. In his case there is, however, no question as to what the law requires. The point at issue is the practical one of what is to be done. In spite of laws and logic, drug and symptom cross one another over the counter between chemist and patient, and will in all probability continue to do so, unless each can be made to see that health and fair trade are suited, as well as professional rule, when a more rational procedure is observed. It has been said (though the comparison is imperfect) that the prescribing chemist is the counterpart of the dispensing practitioner, and a necessary result of the struggle to make pharmacy pay. We are told that if medical men did not dispense we should hear very little of counter-prescribing. It is more than doubtful if the evil could be completely remedied even by such an arrangement. It certainly exists in districts where dispensing practice is virtually unknown. Still, the proposal is noteworthy. It promises at least a material abatement of this ancient abuse, and it would be wise, in dealing with a matter whose adjustment must greatly depend on the co-operation of those most interested, to remove all possible obstacles to a mutual good understanding. Dispensing practitioners think that they have good reason to exercise the traditional art of the apothecary. They maintain it for the convenience of their patients, and for their own advantage, as ensuring a permanent connexion with their prescriptions and with those who use them. A departure from their usual method would, they believe, imply a loss of income. These are doubtless matters of consequence to practical men. We are of opinion, however, that the change to which they demur would not, even in an economic sense, be as unprofitable as they think. The fact that practitioners in other countries not more favoured than our own are content to forego the work of dispensing is an argument in favour of this view. It is probable, therefore, that an extension of the prescriptive method would not entail such difficulties to the practitioner as some expect. If assisted by moderate charges on the part of chemists, it would not unduly tax a patient's means. Lastly, it would be of practical service in removing the *argumentum ad hominem* so freely used in his own defence by the prescribing chemist.

PROFESSOR TILDEN'S address as President of the Chemical Science Section of the British Association was devoted

entirely to education. In the earlier portions he described the foundation of the great schools of practical chemistry which have had so great an effect on the cultivation of the science. Not one of these was in existence fifty years ago, the greatest, the Royal College of Chemistry, now merged in the Normal School of Science at South Kensington, having been founded in 1846. University College preceded it in order of time, but did not at first train any considerable number of advanced students. Many new colleges have since arisen; the older universities have been stimulated into greater activity, and the student who devotes himself to pure science can now obtain facilities for study in many parts of the country. Elementary chemistry has got not only into Board Schools, but with great difficulty into the higher private and public schools. Much of the elementary teaching is still unsatisfactory, partly because the ordinary schoolmaster has a natural tendency to regard science as an "extra" on which promising pupils should not be encouraged to waste time, and partly because imperfectly trained men have occasionally been selected as teachers. We all know the school science master of the old type. He has a smattering of all knowledge, and no real knowledge of anything. He teaches Latin, arithmetic, ancient history, and chemistry with equal facility, and often has to teach them all in the same day. It is said that at the present time teaching is more "earnest," but this generally means that the master is more earnestly anxious that his pupils shall pass some particular examination. The teaching is still in too many cases common in kind. For the examination test, with its defects and advantages, neither the school, the college, nor even the university is solely responsible. No one is satisfied with it; all would rejoice if some more satisfactory intellectual stimulus could be devised. All that can be said for it is that it is at present the only general incentive to exertion and the only sieve for the appraisement of merit that we possess. That it promotes tuition rather than education, most of us admit. The rarely occurring original mind is often cramped by it; but, then, it is clearly good for mediocrity and laziness.

There is at the present time considerable difference of opinion as to the mode in which chemistry should be taught and studied. Much of the confusion arises from imperfect recognition of the diverse conditions under which the study is undertaken. Students may be roughly classified as follows: First we have the purely chemical students, those who mean to be chemists, as an engineering student means to be an engineer. These students must be subdivided into those who can afford a long and expensive education and those who cannot. Then come the students who require chemistry as an auxiliary to some other branch of study or to practical work. In this class we have the students of medicine and of engineering and military science, and those who require some knowledge of chemistry for the manufacture or business which lies before them—as, for instance, dyeing, brewing, or soap-making. Finally, there is the very large class of students who do not want to learn chemistry, but only to pass some examination in which chemistry is requisite. However little sympathy we may have for such students, they cannot be ignored, for as long as the examination test lasts no school or college can afford to neglect them. They have too great an influence on the pass list.

In these various classes and sub-classes the teaching requirements are evidently most various. As to the last unsatisfactory class, it is evidently the duty of the teacher, who is not responsible for the examination, to do all he can to help his pupils through it. It must be remembered that in many cases the pupil cannot fairly be blamed or accused of idleness because he dislikes science and works at it in a perfunctory manner. Take the case of the matriculation examination of the University of London. Hundreds, perhaps thousands, of boys who enter for this examination have a keen delight in literature, are excellent in languages, history, and poetry, and are perhaps intended by Nature to rival MACAULAY or TENNYSON. We do not complain of the examination, but we cannot wonder that such students are not sincerely interested in mathematics, mechanics, or chemistry, or that in reading for the examination they do as little in these subjects as in safety they can. As to those who require chemistry as an adjunct to other studies, the case is equally plain, and any unreasonable demand should be avoided.

Chemistry, and a good deal of chemistry, is essential to the intelligent study of medicine. But why should the student who already has a very extended curriculum before him be compelled to learn things that cannot be useful in his calling? Surely it is evident that the physician and the brewer need not understand the smelting of copper ores, or the mining engineer the derivatives of uric acid, or the chemistry of the carbohydrates. For all such students the main requisites are sufficient general knowledge to render an advanced text-book intelligible and a thorough mastery of all that relates to their own work in life.

In his address at Bath, Professor TILDEN devoted himself chiefly, as was natural, to the training of professional chemists as a means of promoting research and the development of chemical industries. He sketched the present and future requirements of the chemist in a style worthy of IMLAC, and most properly concluded that three years was a time quite insufficient for their fulfilment. He assigns five years as the period of training for a chemist; and, as mathematics, physics ("extensive and sound"), drawing, mechanics, steam, building construction, French, and German are necessary, the estimate is certainly not too low, especially as it is added that the greater part of the chemical student's time is to be devoted to chemistry. Of course, the speaker pointed out that much of this study should belong to the school education; but "a reform all round" is indeed wanted before a schoolboy can be expected to gain all that such a scheme involves. We have no fault to find with Professor TILDEN'S curriculum, even though it includes an experimental repetition of the work of some classical investigations, such as those which he somewhat oddly selects as examples. But we cannot refrain from pointing out that such a course of study would not only be very tedious, but very expensive, and would practically shut out all whose purses were not as long as their heads must be.

This seems to us the great defect of Professor TILDEN'S argument, and of many like it that we have heard before. It would be a grave injury to science if all were practically

excluded from it but those who by the accident of fortune could afford an expense of money and time practically equivalent to a university training. How many lads have had to earn their own livings in the laboratory at sixteen, or even at an earlier age, and how many have by patient evening work, after the scientific routine of the day was over, gained the higher qualifications required for the higher walks of science. Under such rigid rules as Professor TILDEN seems to favour, and which, we learn with regret, the otherwise valuable Institute of Chemistry has adopted, many of our most illustrious scientific workers in the past would have been excluded. A test which would certainly have shut out FARADAY ought to be viewed with suspicion.

WE notice with great satisfaction the scheme for an Intercolonial Medical Congress, to be held in Melbourne, Victoria, from Jan. 7th to 12th, 1889. It is altogether right and meet that the Australasian colonies should thus combine to organise a Congress in which medical men of the different colonies will stimulate each other to the cultivation of medical, surgical, and obstetrical science; and in which the representatives of State medicine and psychological medicine will be duly honoured. This Congress will coincide in point of time with the Centennial International Exhibition, which will be then in full progress. The Congress is a matter of importance, not only to the medical profession, but to the representatives of the State, and we are glad to see that it will have the countenance of the Governors of Victoria, of New South Wales, of New Zealand, of Queensland, of South Australia, of Tasmania, of Western Australia, of Fiji, as well as of the Hon. DUNCAN GILLIES, Premier of Victoria, and of Her Majesty's Ministers in Victoria. Nor is this patronage of statesmen to be a mere form. It takes the substantial shape of the Government placing a sum of money in the Estimates sufficient to cover the cost of publication of the Transactions. It augurs well for the colonies that its leading men show such a high sense of the respect due to a Medical Congress. We have heard much of late of the extent of quackery in these parts. The attitude of political leaders to the conference seems to show that they recognise in Medicine a science to be respected and encouraged as one of the most beneficent influences in civilised communities.

The harmonious action of the profession of the various colonies is another element in the outlook which promises well for the Congress. The Congress is to meet in the University of Melbourne, and the secretarial work will largely devolve on men in Victoria who love work and are known as workers. But with much good taste most of the chief posts of honour have been assigned to men of other colonies. The Presidentship of the Congress is assigned to Mr. T. N. FITZGERALD, of Melbourne. In the Section of Medicine, the Hon. CHARLES K. MACKELLAR, M.B., C.M. Glas., M.P. (Sydney), will preside; in Surgery, EDWARD CHARLES STIRLING, M.A., M.D. Cantab., F.R.C.S. Eng. (Adelaide); in the Section of Hygiene and Forensic and State Medicine, HENRY NORMAN MCLAURIN, M.A., M.D. Edin. (Sydney); in that of Anatomy and Physiology, Professor T. P. ANDERSON STUART, M.D., C.M. Edin. (Sydney); in the Section of Pathology, JOSEPH BANCROFT, M.D. St. And. (Brisbane); in that of Obstetrics and Gynæcology, FERDINAND CAMPION BATCHELOR, M.D. Durh. (Dunedin); in Diseases of the Eye, Ear, and Throat, MARK JOHNSTON SYMONS, M.D., C.M. Edin. (Adelaide); in Psychological Medicine, FREDERICK NORTON MANNING, M.D. (Sydney); in Pharmacology, Baron Sir FERDINAND VON MUELLER, M.D., P.H.D., K.C.M.G., F.R.S. (this Section alone will be presided over by a representative of Victoria). There is a list of eighteen Vice-Presidents and an Executive Committee of eighty or more members. The Treasurer is Dr. GEORGE GRAHAM, of Church-street, Richmond; and the Secretary, Professor H. B. ALLEN, M.D. & B.S. Melb., Melbourne University. The Government of Victoria has, through the Premier, undertaken to show every courtesy to members of the Congress visiting Melbourne. Members from Europe will have free passes over all Victorian railways, and all members of the Congress will be entitled to return tickets at single fares. Shipping companies have agreed to special rates for passages by sea. We cordially commend the Congress to the profession in Europe as well as the colonies, and wish it every success. This success will depend, above all things, on the harmony and co-operation of the profession in Australia. But European members of the profession who can make it convenient to visit the colonies during the Congress will evidently have a very warm welcome.

Annotations.

"Ne quid nimis."

MIND AND MATTER.

IT was a happy choice of subject which led Principal Caird to discourse of mind and matter in the sermon which he preached before the British Medical Association at Glasgow, for the problem of the relation between them is not only of special interest to the student of the human frame, but it is precisely one of those topics which rise beyond the sphere of purely scientific discussion and demand examination by the aid of the broadest generalisations which it is possible to cull from all the sciences. No doubt it is to the physiologist and to the pathologist that men chiefly look to-day for new materials for the doctrine of mind. But at present we are far from having demonstrated a kinetic theory of thought. Between the facts of consciousness and the phenomena of vital functions there is some traceable parallelism, but there is as yet no provable identity. The proof may some day be forthcoming. The presumptive evidence is already both voluminous and striking. It has of late acquired additional impressiveness from the large conclusions which it has been possible to reach concerning the essential unity of energy in all its various manifestations, and there is nothing unreasonable in the hypothesis that brain function and consciousness, for example, are but the reverse and obverse sides of the same fact. There is nothing wild in the expectation that some day, and even shortly, this identity will be scientifically proved, and it is gratifying to find that among the recognised leaders of religious thought there are those who are prepared not only to consider such problems, but also to accept such solutions of them as advancing science may be able to discover. Principal Caird, however, although he displays the fullest appreciation of the strength of the argument which brings mechanical, chemical, vital, and probably mental activities under one comprehensive classification as various manifestations

of energy, is confident that materialistic theories are all open to one final and fundamental objection—namely, that they presuppose mental attributes in the very matter out of which they construct the theoretical mind. The objection, if objection it be, undoubtedly lies against that theory which the preacher had especially in mind, and is even its salient feature. Indeed, it may with equal truth be said that the tendency of modern thought is to materialise our views of mind, or that it is to enlarge and spiritualise our views of matter. The crude notion of something gross and inert no longer satisfies the most sceptical of scientists as a definition of the material part of the universe. He discerns vehement molecular action under the surface of its massive repose: there is heat in its polar ice, tension in its most mobile fluids, elasticity in its toughest solids, and an interpenetrating ether in the recesses of its most compact and coherent masses. Would it be surprising if the crowning discovery were still further to modify our opinion of this strange and ill-comprehended entity, and were to reveal in what we, "in our ignorance of its latent powers, and notwithstanding our professed reverence for its Creator, have hitherto covered with opprobrium," a capacity, barely suspected heretofore, of unfolding the highest manifestations of life and thought? Are there not in heaven and earth more things than are "dreamt of in our philosophy"? From such materialism—if, indeed, materialism be an apt term by which to describe it—the Christian moralist has nothing to fear. For our own part, indeed, we hold that the authority of morals and the truths of religion are not in any case contingent upon the regnant physical philosophy. The inward needs which they satisfy, the outward facts which they serve to generalise, and the profound emotions to which they give expression, are as permanent as humanity itself. Their language may undergo modification, their sanctions may be subject from time to time to change, but the unquenchable thirst for truth, the inexpugnable reverence for right, will continue in the future, as in the past, to make morality something more than a way of reconciling opposing interests, and religion nothing less than the highest devotion of the noblest spirits among the sons of men.

TIGHT LACING.

AMONGST the various subjects to which the members of the British Association directed their attention at the late meeting at Bath, and upon which the ladies attending the Biological Section may fairly be regarded as competent to express an opinion, was the custom of women to wear stays. The discussion might have been considered a mere playful interlude introduced by Professor Roy and Mr. Adami to enliven the proceedings, were it not that trivial subjects—trivial, that is, from the Association's point of view—are most likely to excite the bitterest feelings. The wearing of corsets has really two aspects, which deserve separate consideration—the hygienic and the æsthetic. From the hygienic point of view, the question resolves itself into one of the degree to which the compression, or, as women say, the support, of the chest is carried, and the rapidity with which that degree is attained. The body as a whole, and the several organs composing it, have a wonderful power of accommodation to surrounding circumstances, permitting changes of form and even of position that appear at first sight incredible, without material impairment of function. If the form of so unyielding a part as the head can be greatly altered, with preservation of ordinary brain power, as occurs amongst many savage tribes, by pressure begun early and steadily continued, we may be sure that much more might be accomplished if similar pressure were applied to so mobile a part as the chest without greatly impeding the function of respiration. Such moulding of the form of different parts is familiar to all as an effect of disease; and many a man or woman, after an attack of pleurisy terminating in empyema and adhesions, possesses an unsymmetrical thorax, which nevertheless serves him or her well throughout a long and active life. The body, in other words, permits considerable liberties to be taken with it without serious impairment of health; and if pressure of the chest were commenced in early childhood, and steadily persisted in, no doubt still greater deviation than is commonly seen could be induced. As a matter of fact, however, in this country such pressure is not applied; the stays given to girls by sensible mothers up to the age of fourteen or fifteen are soft, and exert little more pressure than the waistcoat of a boy. At that age, when the figure naturally changes, the firmer support is taken into use, and the amount of harm it occasions is dependent on the degree to which support becomes compression. There are no doubt many girls who, desirous of making themselves conspicuous and, as they foolishly believe, attractive, tighten their waists to such an extent as to incapacitate them for taking exercise and for the necessary ingestion of food; they consequently become weak, pallid, and chlorotic. These evils are, moreover, intensified by the rapidity with which the compression has been applied, and all who are interested in their welfare should exert themselves to point out the egregious folly of such a practice. Upon the æsthetic side of the question there is little to be said; here, as in so many other controversial questions, *de gustibus non est disputandum*. Amongst the Greeks, for ages the arbiters of taste, the women wore an apology for stays, and we are told that at a very early period the girdle was strengthened by metal, and long before the Christian era a broad band or belt was worn next the skin to support the breasts. According to Planché, the practice of tight lacing appears to have been introduced by the Normans as early as the twelfth century, and has been in use ever since. We apprehend the ordinary Englishman, though he may wonder at, does not really admire, a wasp-like figure. Both hygienically and æsthetically, tight lacing is a mistake. Yet it must be remembered that, partly as a result of climatic conditions, partly from abundance of food and absence of severe work, and partly perhaps from the hereditary effect of sexual selection, a large proportion of the young women of England, of the middle classes at least, are disposed to the accumulation of fat in the breasts, and though from the age of seventeen to twenty-four the breasts may be firm and prominent, yet after that period they are apt, without artificial support, to become flaccid and pendulous. The advantage of support, however, is no argument for the employment of compression. Dr. Hoyle made a good hit in saying that no woman regarded herself as properly dressed unless she felt a little uncomfortable. He might have added that the proportion of discomfort experienced may be pretty safely taken as the measure of mischief being effected in the willing victim of tight lacing.

THERAPEUTIC METHODS.

WE take the following passage from a clever, if somewhat satirical, paper entitled "Therapeutic Nihilism," by Dr. Maurice Clarke, which was read before the Massachusetts Medical Society.[1] "Some men are naturally disposed to look at disease from the standpoint of preventive medicine; some from that of hygiene; some with a reverence for the *vis medicatrix naturæ;* some with a belief in active medication. The latter position is certainly the most attractive to the average medical man, and, in the presence of any serious illness, it is the most acceptable to the laity, in spite of the popularity of that therapeutic *opéra bouffe*, homœopathy. Again, some men incline to run after new

[1] Boston Medical and Surgical Journal, Aug. 30th.

fashions, treating all diseases impartially and indefatigably with the newest discoverable drugs, and endeavouring to keep up with the 'samples' of the manufacturing chemist; this is the experimental therapeutist. Others, too inert perhaps to shift for themselves, leave to these the practice of experiment, but borrow from them the suggestions their results afford; this may be called vicarious therapeutics. Others, again, settle back into the comfortable habit of always giving the same thing for the same disease, and thus, having once been in travail and delivered of a diagnosis, have nothing left to do but consult their books or their memories for the indicated remedy; this method of practice, I suppose by far the most common and certainly the most degrading of all, is routine therapeutics. There are a few physicians, however, who look upon each case as to a certain extent *sui generis*, and who bring to its relief not only the results of the experience of the past and the experiments of the present, but also a personal opinion of the needs of a particular case, and who, so far as they are let, endeavour to do what a sound training, an impartial judgment, and an active conscience command, and this seems to me rational therapeutics."

"IS MARRIAGE A FAILURE?"

IT is very questionable if the correspondence which has lately made its appearance in a daily paper under this absurd heading is not really as aimless as it is abundant. To discuss with all gravity the *failure* of an arrangement which is simply indispensable to civilised and moral existence because it is, like every work in human hands, imperfect, is surely in itself suggestive of a fallacy. We do not say that such a discussion is wholly fruitless. It may in some cases prove useful, by enabling the discontented to air their grievances, and to exchange with fellow-sufferers, in a printed form, and, as it were, under new management, the old remedies for wedded strife, the old articles of the domestic faith. It will probably also do some harm by prejudicing unsettled heads in favour of hasty conclusions, and by opening up a taking theme for idle tattle. The cynical think-little, do-little, wordy believe-nothings who are always on the watch for languid sensations will regale themselves on its exposures. It is very unlikely, however, that any gain of real value will emerge from this mass of confessions which has not already been obtained over and over again from the simpler teaching of common daily experience. We have taken exception to the general title of this correspondence. It would, indeed, be difficult for any individual to prove out of a limited personal experience the plausible assertion that marriage has failed to attain its purpose. Scarcely any better success is to be expected from the published opinions of many contributors. We need not in this case look for more than a consensus of discontent and of remedial suggestion. It is hardly possible to conceive of any substitute arrangement by which the relations of the sexes could be regulated. Marriage customs and their consequences vary no doubt very widely among different peoples, and they are not by any means all equally beneficial. Still it must be allowed that the drawbacks to their observance are altogether trivial in comparison with the social anarchy which must follow their removal. We must remember also that the unhappiness which attends many unions is to a large extent avoidable. It is not, indeed, to be obviated by any merely formal arrangement of compromise between husband and wife, but it can hardly exist where mutual help and consideration are freely interchanged. Selfishness is the great destroyer of domestic peace. In spite of many follies and troubles, of the heedlessness of early marriage, of scanty income, of hereditary delicacy and actual illness, there is a strong vitality in the goodwill of many families. The source of this is a sense of common interest. Contentment grows apace in the presence of this frank regard of each for the well-being of the whole, and if harmony is any proof of success, marriage is not then a failure.

HYDROFLUORIC ACID IN PHTHISIS.

DR. GAGER of Arco, near Gastein, has published in a Hungarian medical journal an account of seventeen cases of phthisis in which he employed the hydrofluoric acid treatment. From the results obtained he is led to think that this treatment is in some cases capable of exerting a really beneficial influence. His method of procedure differs somewhat from that employed by Dujardin-Beaumetz, Hérard, Garcin, Lépine, and other French physicians who have written on the subject. As an inhalation chamber, he made use of a compartment of a wooden hut, which was well boarded, and had a well-fitting window-sash and door. Its capacity equalled eight cubic metres. In this the patients —one, two, or three at a time—were seated, their clothes being protected from the injurious effects of the acid by sheets. The gas was manufactured in an adjoining compartment, and conveyed to the ceiling of the inhalation chamber by a leaden pipe. For the preparation of the gas, Dr. Gager at first employed Seiler's apparatus, but subsequently discarded it for one he devised himself out of a pair of bellows, a gas meter, a three-necked gutta-percha bottle of the capacity of a litre, with some indiarubber and leaden tubing. This apparatus (which is now obtainable from Herr Siebert of Vienna) answered so well that he has employed it constantly. A solution of hydrofluoric acid was used of the strength of 46 to 54 per cent.—i.e., of from 28° to 32° of Beaumé's hydrometer. Sometimes this solution contained minute quantities of sulphuric acid or of sulphuretted hydrogen, but no evil effects were produced by these impurities. They came off almost entirely in the first five or ten minutes, so that if after that time the inhalation chamber was well aired the gaseous contents were subsequently pretty pure. As the inhalation chamber was closed, the air soon became vitiated by the patient's breath. It was therefore always necessary to open the door and window for two or three minutes so as to ventilate the apartment from three to eight times during the hour the inhalation was continued. As a rule, the patients were ordered one sitting of an hour's duration daily; occasionally, however, two sittings were given. The volume of air impregnated with hydrofluoric acid driven into the chamber was, during the earlier sittings, from 80 to 100 litres per head during the hour. After the first five sittings, when the patients had become a little habituated to the gas, the amount was increased to from 100 to 600 litres per head. Into the gutta-percha bottle was poured 100 grammes of distilled water, and to this 30 grammes of the solution of hydrofluoric acid of the strength of 30° to 32° Beaumé added. The bottle was not emptied after the sitting, but before the next time it was required, a fresh portion of 30 grammes of the acid solution was added, and this was repeated until the amount of fluid in the bottle reached to nearly 300 grammes. It was then emptied, and 100 grammes of distilled water put in again, the acid being added as before. The external temperature appeared to influence the quantity of gas taken up by the air, as it was forced through the solution considerably. On warm days the patients always remarked that the "inhalation was stronger." On these occasions a little pure air was also pumped into the inhalation chamber. All the patients on whom this treatment was tried presented tubercle bacilli in their sputum, the author's investigation being specially directed towards the "antibacillary" property of the hydrofluoric acid. Care was also taken to examine the state of the kidneys

and the urine so as to exclude all cases with renal complications. All the patients complained during the first three sittings of smarting and itching in the nose, of smarting in the eyes, and often of sneezing, which lasted for days. Some patients had increased cough, and even streaks of blood in their sputum—the inhalations having, indeed, to be stopped for some days on that account. Thirteen of the seventeen patients found their appetite increased after the inhalations. In one case there was a slight epistaxis. The following is a *résumé* of the general results obtained:—(*a*) In five cases the bacilli disappeared from the sputum, a marked improvement of the symptoms being also noted. (*b*) In seven cases there was a distinct improvement in the physical signs. (*c*) The body weight increased in twelve patients, but the amount of the increase appeared to bear but little relation to the improvement of the general phyiscal condition; e.g., in one case where the bacilli disappeared, and where the physical signs improved, there was no increase in the weight at all, and in another there was no improvement, though the weight increased nearly four pounds. (*d*) Three of the patients had pyrexia; of these, one lost it entirely, together with all the expectoration and bacilli; in the second case the fever decreased, but in the third it continued as high as ever. (*e*) One of the patients suffered from night sweats; these entirely disappeared. (*f*) In seven cases the vital capacity increased to the extent of from 100 to 600 cubic centimetres. (*g*) In two cases somewhat severe irritation of the laryngeal mucous membrane was set up, thus showing that this kind of treatment is contra-indicated in cases of laryngeal phthisis—at all events, only an exceedingly small quantity of the gas ought to be given. (*h*) In five cases, including one where laryngeal complications existed, no improvement could be noticed; one very advanced case died. (*i*) No evil after-consequences presented themselves in any of the cases.

THE ANALYSIS OF WELL WATER AT GREAT GRIMSBY.

IN a recent report submitted by Dr. Page to the Local Government Board on the sanitary condition of the adjoining urban sanitary districts of Clee-with-Weelsby and Great Grimsby with reference to the prevalence of enteric fever there, the continuance of the use of well water in Great Grimsby, and the attitude of the sanitary authority in regard to the chemical analysis of waters obviously liable to the risk of contamination by soakage of filth, are especially adverted to. Wells to the number of some seventy or eighty are in use in different parts of the borough, and no comprehensive action is taken as regards them beyond the closure of such as have been actually condemned on chemical analysis, and this although the medical officer of health has reason to attribute frequent occurrences of enteric fever to the use of the water from these wells. Amongst some of the waters recently sent for analysis there were two deserving of some notice. One was from a pump well supplying ten houses, and into which the yard cesspool was discovered to leak; the other was from a pump supplying six houses, and which shortly before yielded a water of a "stinking and undrinkable character." The results of the analyses of these waters led to the following opinion on the part of the analyst: "Water of a very high degree of purity, and if drawn clear of deposit everything that could be desired." And again: "Seems to have received salt water to a small extent; fairly good water if allowed to stand to allow the slight deposit to settle." These are some of the many instances which have come before us from time to time, showing how dangerous it is for the chemist to express an opinion as to the wholesomeness of a water supply when the formation of his judgment has to be based only on the chemical constituents of the individual sample which has been submitted to him. We would gladly see chemists limiting their reports to a statement of the actual chemical results obtained by them, leaving the interpretation of those results to those who know the local circumstances of the supply. If they did so, much more comprehensive action might result in the direction of getting rid of supplies drawn from dangerous sources. "The chemist can," to quote the medical officer of the Local Government Board, "tell us of impurity and hazard, but not of purity and safety. For information about these we must go, with the aid of what the chemist has been able to teach us, in search of the conditions surrounding water sources and affecting water services."

FRONTO-FACIAL ASYMMETRY IN EPILEPTICS.

IN the current issue of *Le Progrès Médical*, MM. Bourneville and P. Sollier direct attention to the frequency with which a certain degree of want of symmetry in the face and forehead is met with among epileptics. The point was originally noted by Delasiauve, and then by Lasègue, who regarded this asymmetry as an important element in the disease, suggesting even that the malformation of the base of the skull which must accompany such an asymmetry might actually be the cause of epilepsy. MM. Bourneville and Sollier do not discuss this point, but content themselves with a re-examination of the anatomical fact, the correctness of which was disputed by Garel in 1878, upon the results of his examination of a large number of epileptics, as well as of healthy individuals. But he did not apparently confine his observations to cases of idiopathic epilepsy, and he misinterpreted Lasègue's observation to be that facial asymmetry meant epilepsy, and not that epilepsy was always associated with facial asymmetry. Obviously the former proposition is by no means true, since facial asymmetry (to a certain slight degree) is probably the rule. Neither Lasègue nor Garel employed any definite method for testing the point, and accordingly the present attempt of MM. Bourneville and Sollier was made to obtain more exact information. Casts were taken of all epileptics dying at La Salpétrière and Bicêtre, the limitation to fatal cases permitting of the exclusion of symptomatic epilepsy, and the casts allowing of very precise measurement and comparison. By a simple device tracings were taken around the head at different levels; so that accurate measurements could be made of the circumference at the frontal eminences, at 25 mm. above the eyebrow, and also at the level of the malar eminences. The detailed results of the series of thirty cases thus accurately measured are given in a thesis by M. Pisen, who worked under their direction. They were struck by the frequency with which the fronto-facial asymmetry occurred. In only one out of the thirty cases was there no real asymmetry, the forehead alone projecting rather more on the right side than on the left. In all the other cases, there was either frontal, facial, or fronto-facial asymmetry, associated often with asymmetry of the nose, mouth, or chin. Thus, these measurements completely confirmed the clinical observations of Lasègue. They noticed, furthermore, that young epileptics who died before the basis cranii was consolidated showed this asymmetry often to a very marked degree; and therefore it is suggested that the asymmetry is due to an arrest of development rather than defective ossification. The authors incline to the belief that the cranial deformity is directly associated with cerebral deficiency, so that in their view the asymmetry characteristic of the epileptic is practically the index of the lack of cerebral development, and not the cause of the latter.

Very often in such cases the cerebral hemispheres are of unequal size. The subject, however, is still open for further investigation in these respects. As a clinical fact, the observation that the majority of cases of idiopathic epilepsy present "fronto-facial asymmetry" is of considerable interest. It may even, as MM. Bourneville and Sollier point out, be employed as an aid to the differential diagnosis between such cases and those of symptomatic epilepsy.

HYGIENIC CONGRESS AT BOLOGNA.

A HOLIDAY contributor writes:—"Besides its Exhibition of Industry and the Fine Arts (still open) this grand old historic city is preparing another attraction, this time for the ever-increasing public which is interested in State medicine. The third assembly of Italian hygienists holds its meetings in the Archiginnasio, lately the scene of the commemoration of the eighth centenary of the University, and these will last four days, from October 6th to the 9th inclusive. The programme is of special interest, not too comprehensive and not too varied, but well selected and well calculated to evoke salutary discussion. It includes the following subjects:—(1) The Prophylaxis of Syphilis; (2) the Rag Trade in respect to the Public Health; (3) the Artificial Colouring of Alimentary Substances; (4) the *Matériel* of Construction in relation to Hygienic Architecture; (5) Artificial Butter; (6) the Provisions of the New Sanitary Code about to be presented to the Italian Legislature. The medical and hygienic authorities already announced to take part in the proceedings are numerous, and represent all European countries, Italy herself contributing her Ministers of Public Instruction and of the Interior. The organising committee cordially invites the participation of all who are interested, whether professionally or as amateurs, in the subject matter of the Congress, and *biglietti d'ingresso* (entrance tickets) will be forwarded freely to all applicants addressing themselves to 'The President, Royal Italian Society of Hygiene, 5, Via Clerici, Milan.' Reduced railway fares and other privileges in the matter of excursions and entertainments are among the liberal provisions vouchsafed by the committee to its guests."

MEDICAL INSTRUCTION FOR SEAMEN.

THERE is no class in any civilised people so far removed from the helping hand of the surgeon or physician as are its fishermen and sailors while at sea. In spite of the fact that the larger vessels usually have a medical man on board, there is a multitude of cases for which no adequate provision has been made in view of possible illness or injury. In consideration of this deficiency, a movement is now on foot for instructing sailors, whether officers or men, in such principles of treatment as might prove serviceable in cases of emergency. The St. John Ambulance Association has been mentioned as an appropriate medium for the proposed course of instruction, and the work is worthy of its efforts. It is a matter of some difficulty to say what should be the plan and limits of such a course. The ordinary principles which underlie all treatment must still be taught as heretofore; but details alike of principle and practice will have to be modified to suit the peculiar exigencies of a life at sea. The plan of instruction might even have to be extended somewhat. It has been proposed to instruct masters and men in surgery. To do this in any but a very imperfect way is, of course, impossible. Nevertheless, there are, and must be, occasions on which surgery and medicine also have, in the case of ship masters, a real and practical though a limited meaning. On land it certainly is most advisable, when "first aid" has been rendered, to summon medical assistance. At sea, did circumstances allow, no other practice could be so desirable. But often this is not the case. Separated by days of ocean travel from any skilled practitioner, a ship captain is, in the event of illness, cast upon his own resources. There are times when he must act. He therefore carries with him a medicine chest of simple remedies, and a few indispensable instruments—as, for example, the catheter. It is needful that he should know, as far as it is possible to teach him, how to use without abusing these, when to treat, what to do, what not to do, and when to stand aside. We cannot make him a doctor, nor substitute him for one; but by thus instructing him we shall, with the least avoidable risk, prevent him from doing positive harm as an idler in times of urgent need. These remarks of course apply solely to the case of officers. For ordinary seamen, who exercise hardly any responsibility in comparison, the instruction comprised within the scope of the usual ambulance course is amply sufficient.

LOW TEMPERATURES IN LUNATICS.

DR. M. SCHÖNFELDT, one of the medical officers of the Röthenberg Asylum, Riga, communicates to the *St. Petersburger Medicinische Wochenschrift* notes of two cases of subnormal temperature occurring in insane patients, which he thinks it well to record, although there was nothing very special about these cases. Since the first paper by Löwenhardt on the subject was published, in 1868, some thirty cases have been recorded in medical literature and the course of the phenomenon discussed, though this is as yet by no means very clear. In Dr. Schönfeldt's two cases the following explanation of the lowering of the temperature is suggested. In one patient the cause was thought to be in the long and trying excitability which existed, together with insufficient clothing and nourishment, although experience teaches us that these do not always lead to a diminution of temperature. The other case was apparently susceptible of an explanation of a physical character. Numerous baths and a complete absence of clothing at a cold season of the year might easily result in a considerable loss of the warmth of the body, and a consequent diminution of temperature. The two cases have many features in common with those already recorded—viz.: the form of disease—dementia paralytica; continual irritability during the course of the disease; lowering of temperature, particularly after disappearance of adipose tissue; and the immediate cause of death (pneumonia), the cause of the pneumonia being probably septic infection. It is remarkable that the subnormal temperature of 29·5° C. was raised by the pneumonia to 37·2° C.

PUBLIC MORTUARIES.

THE Whitechapel tragedies are bringing to light more than one metropolitan want. The need for proper mortuary accommodation in the Whitechapel district was the subject of protest by Mr. Phillips, who complained of the impropriety of expecting medical men to make autopsies in places wholly unfitted for the purpose. His views were endorsed by the coroner and jury at the inquest of the unfortunate woman who has been recently murdered, the former stating that there was no public mortuary between the limits of the City of London and Bow. The absence of accommodation of this kind is an undoubted reproach to London, which would not have been tolerated had any sufficient system of sanitary administration existed in the metropolis. The method of leaving every district to manage its own affairs, without inquiry by any department of the State, is doubtless responsible for much of the default of local authorities. The position of London generally in respect of mortuary accommodation would make a fitting subject of investigation by the Local Government Board or Home Office.

NATIONAL DISEASE PROBLEMS IN SOUTH AFRICA.

UNDER the above heading, Dr. Charles F. K. Murray dealt, in his recent Inaugural Address to the South African Medical Association, with some of the problems which urgently call for solution by the Legislature, if the growing populations of the South African colonies are to be protected against the uncontrolled invasion of certain diseases which must be regarded as preventable, and proper to be placed under definite penal and other restrictions. Leprosy, for example, is acquiring a hold upon some portions of the population; but as yet a *laissez-faire* policy prevails, which allows lepers to carry on such trades as hawkers of fruit, vegetables, and fish, tailors, dressmakers, laundresses, butter-makers, and confectioners. Dr. Murray appeals to past history and to the attitude of other countries in support of his contention that segregation alone offers a solution of the difficulty which has to be faced, and he refers to a number of countries, including Great Britain and France, to show how freedom from leprosy was only brought about as the result of the establishment and maintenance of leper houses. The gaols are, in his opinion, partly responsible for the spread both of leprosy and of syphilis; the syphilitic, the leprous, and the intemperate being herded together under conditions of systematic overcrowding, in ill-contrived and badly-ventilated cells. The conditions under which syphilis is spread is a matter of very grave importance to the future population. Evidence is quoted in support of the statement that in some localities a large proportion of the lower classes are syphilised, and details are given to show how the disease is communicated by nurses and others to children. Coloured nurses resort habitually as a favourite procedure to that most objectionable practice of themselves chewing the food of infants, and thoroughly insalivating it before giving it to the children; and when those children are found with condylomata in their mouths, the same condition can be detected in the mouths of their nurses. Alcoholism is the next disease touched on in the address, and it is appalling to contemplate the ultimate results which must ensue, especially to the coloured races, on the uncontrolled consumption of alcohol in a colony where wine is sold at 1*d.* and 1½*d.* a bottle, and brandy at from 4*d.* to 6*d.* a bottle. The task before the colonial Legislature, as regards the control of these three specified evils, is admittedly an onerous one; but if the national health is to be maintained, now is the time for considering how remedial action can best be applied. Other points beyond the medical bearing of the question will doubtless have to be held in view; but nothing can excuse delay, which will be the more fatal the more it is prolonged.

ERYSIPELAS AND TUBERCULOSIS.

As the result of experiments, M. Solles concludes that erysipelas retards the evolution of experimental tuberculosis in the guinea-pig; the animals may survive twice as long as when erysipelas is not produced in them. This survival is all the more remarkable since experimental tuberculisation in the guinea-pig causes a general tuberculosis, which is much more rapid and much more serious than human pulmonary phthisis. The antituberculous action of erysipelas is double: it has a general influence, as shown by the prolongation of life; and it has a local influence limited to the erysipelatous area, causing the induration, ulceration, and lymphatic swelling due to the tubercle to disappear. This localised action, clearly antagonistic to tubercle, is of such a nature, argues M. Solles, as to encourage the search after some parasite which shall have the power of destroying the bacillus tuberculosis.

THE PEOPLE'S FOOD QUESTION IN SWITZERLAND.

THE Swiss Society for the Promotion of the Public Good has addressed to all the Working Men's Clubs, Mutual Co-operation Unions, and Agricultural Labourers' Associations, throughout the Confederacy, a circular inviting their support in the work of improving and cheapening the alimentation of the people. An important advance in this direction might, the Society urges, be made by the extension of the use of milk and cheese as articles of consumption. Strange as it may appear, such food—so satisfying, so sustaining, and, if properly produced, so accessible to the very humblest—has yet to be made the subject of special recommendation to the comparatively well-educated, undoubtedly intelligent, and industrious Swiss. Yet such is the case; and accordingly we read of an appeal to all branches of the above Society "to arouse in the popular mind an interest in the matter, as well as to open up the ways and means of extending the consumption of milk and cheese." For the furtherance of this object, proceeds the circular, "the local branches are requested to establish courses of culinary and household instruction (*Koch und Haushaltungskurse*), with immediate reference to the wants and circumstances of the labouring classes. For the conducting of such courses the pupils of the culinary school at Reussport, near Lucerne, are qualified and licensed. As has been done in the Canton Aargau, these branches can, in all the cantonal villages, establish depôts for the supply of genuine milk and unadulterated cheese, and, in cases where during the winter they furnish the poorer children living at a distance from school with the midday meal, they can make the said meal consist mainly of milk and cheese with bread." The agricultural branches of the Society are reminded that they are in a position to exert a salutary influence on cheese-production, and especially to diffuse the making of its household varieties which has recently been brought so near perfection. To the artisan branches, on the other hand, appeal is made to promote the consumption of cheese by rendering it as accessible as possible, and moreover, in the interests of their respective *clientèles*, to see to the purity of the milk concurrently supplied. This Swiss movement is one to which sanitarians nearer home might well give attention, and its results should be watched and noted by all who realise the daily-increasing urgency of the popular food supply in all countries.

A COUNTY COURT JUDGE ON A HERBALIST'S CLAIMS.

RECENTLY, at Bridgnorth County Court, a herbalist, Reuben Boulet, sued Mr. J. H. Sampson for £25 2*s.* 8*d.*, the value of botanic preparations supplied to his wife. The plaintiff's attorney declared the herbalist had cured defendant's wife after hundreds had been spent on regular doctors. He said his client could only charge for herbs not in the Pharmacy Acts. The defendant refused to pay, alleging that his wife was worse instead of better for the herbalist's applications. The judge seemed a little puzzled as to what to do between a disposition to give the herbalist something and a doubt whether he was entitled legally. At one stage he said of the herbalist: "Well, he is just like a physician. A physician cannot recover his fee, therefore you pay the physician when he calls, and there's an end of it. If he can get people to have confidence in him, they should pay at the time." To defendant: "There may be some things here you will have to pay for. You have tried to avail yourself of this man's services, and you must not come to the conclusion that you should not pay anything, although I do not think you should pay a large amount. I know what I am about, and if you force me I shall ask you a few searching questions." In the end, and after an hour's

adjournment, his honour said he had no option but to nonsuit the plaintiff, with costs. We should have thought the judge might have reached this conclusion sooner. A physician can recover his fee, like other registered medical men, unless there is any bye-law to the contrary in his college.

PARLIAMENTARY REPORTING.

"HANSARD" has come to be so familiar a word in connexion with Parliamentary reporting that probably to many people it sounds more like a technical term than like a publisher's name; and the idea that the privileged reporter is anything less than a great officer of Parliament will be new and strange. Yet so it is, as we are reminded by an interesting Blue-book just published, which contains the results of an inquiry, conducted by a joint committee of both Houses, into the present system and its improvement. "The committee are informed that due notice to terminate the present contract with Mr. Hansard has been given," and if their recommendation should be carried into effect, the next contract will be put up for tender, and given upon the result of competition. The production of an accurate report of Parliamentary proceedings is a matter of much more than merely historical interest, and we are glad to see that it has been considered by the committee with a due regard to the importance of condensation on the one hand and precision on the other. We have no doubt that the conclusion at which they have arrived is the right one, and in particular we wish to emphasise the important suggestion which they throw out that debates on private Bills be reported with the same fulness as debates on public questions. The great importance of private Bill legislation under our existing Parliamentary methods demands this provision; indeed, it is in this respect chiefly that an officially recognised report may be expected to excel those which are furnished to the public as the fruit of journalistic enterprise.

THE MANCHESTER SEWAGE SCHEME.

A PUBLIC inquiry is in progress as to the borrowing of money for the purposes of a sewage scheme for Manchester. Dr. Frankland supports the scheme proposed, which in many respects resembles that carried on at Coventry. As to the ninety-five acres of land which it is proposed to take in connexion with the system, he states that it is very appropriate; first, by reason of its conformation, which would enable the sewage to be taken to it under favourable conditions; secondly, from its chemical and physical composition; and thirdly, by reason of its comparative remoteness from human habitations. He also holds the view that the effluent could properly be passed into the Manchester Ship Canal, and he is sanguine enough to contend that, although something like two hundred tons of sludge would be precipitated daily, houses built up to within some fifteen or twenty yards of the tanks would not be injuriously affected. With so wide an area of site, it may be hoped that the tanks will not need to be so placed as to render building operations in such close proximity to them necessary.

NON-VACCINATION IN LEICESTER.

LEICESTER continues to glory in her shame, and to publish the most unblushing statistics of folly and disrespect for law in the matter of vaccination, such as the following: that whereas in 1873 there were 4460 births and as many as 3730 successful vaccinations, in 1887 the births reached 4693 and the successful vaccinations fell to 322! So that thousands of children are added yearly in Leicester to the number that depends for its safety from one of the most awful diseases on living in Leicester, and on the vigilance of Leicester sanitary authorities. Time will show who is right—Leicester or the world.

THE HABITUAL DRUNKARDS ACT.

THE eighth report of the Inspector of Retreats under the Habitual Drunkards Act (1879) for the year 1887, with appendix, is published. The material for such reports is short. Two new retreats were opened during the year. Montague House, Brook-green, was opened in April for ten female Roman Catholic patients. At the end of the year a licence was granted to Dr. Westbury of Amesbury House, Amesbury, for three patients—two male and one female. There are now seven retreats. Sixty-six patients were received into the retreats in 1887, as against seventy-three in the previous year. No death has occurred, and the inspector reports that the patients have been kindly treated. In no case has the interference of the Secretary of State been necessary. The greatest number of admissions under the Act (17) was in Tower House, Westgate-on-Sea. The next greatest number (14) was in Dalrymple Home. In the latter establishment nineteen others were admitted as female patients, and do not count in these returns.

THE CAUSE OF SEA-SICKNESS.

AT a recent meeting of the Paris Academy of Medicine a paper was read by M. Pampoukis (of Athens) and M. Dastre upon experiments on "sea vertigo" (*le vertige marin*). They show that, in spite of their peritoneal connexions, the abdominal viscera are considerably shaken in movements of the body, and that they impinge particularly against the diaphragm and anterior abdominal wall. Owing to this, contractions occur through irritation of sensory nerves, with the effect of limiting the visceral movements. It is suggested that the Pacinian corpuscles in the mesentery may be the structures which are stimulated by the dragging of the mesenteric nerves occasioned by the movements referred to, and that through their irritation motor impulses are excited reflexly. Abdominal belts which restrain the movements of the viscera against the wall do not, however, prevent those against the diaphragm.

FEMALE INFANTICIDE IN INDIA.

THE hardships to which many Indian women and girls are still exposed as a mere condition of their sex may well excite the pity of their fellow subjects in this country. Important changes have certainly been brought about, but much remains to be done. We seldom now, it is true, hear of the suttee. Fortunately for all those who were wont to be concerned in it, this barbarity of devotion is practically a thing of the past. Child marriage and widowhood, however, still continue to poison the very spring of Hindoo life, and are stoutly defended as essential to the social system. Female infanticide, as we are reminded in a statement by Surgeon-Major Pringle, is largely practised, and is even defended by its promoters on humanitarian grounds. It is a point singularly illustrative of the utterly false ideas upon which the life plan of Indian women is based that the observance of this detestable practice is, with many fathers of girl infants, a mere matter of paternal duty. The child is made away with in any convenient way in order to save her from the possibility of a dishonoured womanhood. The contagion of small-pox has often been invoked in the hope of obtaining a fatal result. Under a mistaken view of his powers the services of the public vaccinator were for a like reason popular in certain districts. Girls were subjected to the operation, but boys omitted until the discovery of its protective powers caused a reversal of the procedure, a practical testimony in favour of this measure which is all the more cogent because it was unwilling. The Indian Government, it is satisfactory to learn, is taking steps to suppress as far as possible the practice of infanticide in the

villages where it prevails. That it will meet with opposition is only to be expected. It cannot be supposed that ignorant and misguided men, jealous of a supposed duty, will at once agree to surrender it at the instance of reformers, however enlightened. That they will in time do so cannot be doubted. We would fully admit the value of tact in all measures of this kind, but we would also remember that native Indian opinion is even now becoming leavened with the spirit of reform. It is reasonable, therefore, to expect that, as with the practice of suttee, the exercise of a judicious firmness will in due course bring to the Government that success which its efforts deserve.

THE SANITARY INSPECTION OF BUILDINGS.

WE have received a copy of a report of the North-Eastern Sanitary Association, giving an account of the atmosphere of twenty-six buildings in Newcastle-on-Tyne. We note with pleasure that this branch of sanitary inspection is receiving attention. Hitherto the inspection of similar associations has been too much limited to an inquiry into conditions of drainage; and, important as that subject is, it by no means covers the whole question of the fitness of a house for habitation. We observe that the gentlemen who have conducted the experiments are opposed to what is known as natural ventilation. Unfortunately, no great success has hitherto attended the efforts of engineers to provide artificial methods for securing the adequate supply of fresh air. To use the words of the report, ventilation of public buildings "represents the most bemuddled branch of human knowledge extant." Perhaps greater thought will be given to this subject as its necessity is more recognised.

THE BRITISH PHARMACEUTICAL CONFERENCE.

THE British Pharmaceutical Association held the twenty-fifth annual meeting at Bath, under the presidency of Mr. F. Baden Benger. In his address, the President dwelt upon the great development of the Association, and the increasing interest shown in its proceedings by those attending the meetings. The relation of pharmacy to pharmacists, and the education and training most likely to improve this relationship, formed the main topics of the address. Considering pharmacy as a field for the practical application of science, Mr. Benger urged the need of a broader range of subjects in the preliminary examination. Several papers of interest were read, and the report of the Unofficial Formulary Committee was presented by Mr. W. Martindale, F.C.S.

EXPERIMENTAL PHYSIOLOGY IN FICTION.

MATTERS of medical interest often get whirled into the vortex of fiction, and frequently mystify the general reader while they amuse the profession. In "Tracked Out" (Arrowsmith's Bristol Library) the author has very ingeniously made experimental physiology lend valuable service. In fiction an author may well be allowed to obtain results beyond those of the laboratory, but Mr. Arthur à Beckett is to be congratulated upon his moderation. He has only made a head speak *four* words after its severance from the body, hence there is much to be elucidated after these post-mortem utterances.

DR. WOLTERING ON GLUTEN BREAD.

DR. WOLTERING, of Münster, in Wurtemburg, writing in the *Allgemeine Medicinische Central-Zeitung*, strongly recommends the more extensive use of gluten as an article of diet, both on account of its extremely nutritive qualities and of its very low price. He shows, by means of tables of analyses, that pure gluten bread is some three times as nourishing as meat, and that bread made with the addition of 40 per cent. of gluten contains more albumen than hare or chicken of the best quality.

YELLOW FEVER IN FLORIDA.

THE epidemic of yellow fever at Jacksonville is reported to be increasing, and during the twenty-four hours ending at 6 P.M. on the 18th inst. 156 fresh cases of the fever and 20 deaths were recorded. Since the outbreak of the epidemic 1203 cases and 153 deaths have occurred. The United States Senate has voted 100,000 dollars for the relief of the sufferers. The disease is so far confined to the city, and for the comfort of the relatives and friends of the many Englishmen resident in the State it is satisfactory to be able to add is likely to remain so. The vast majority of Englishmen in Florida are settled in the pine woods, and here the disease has never yet occurred.

ACTION OF CHLORIDE OF ETHYLENE ON THE CORNEA.

CHLORIDE OF ETHYLENE is often used by physiologists abroad to anæsthetise dogs. M. Dubois has observed that the cornea of the animal thus anæsthetised undergoes a change some hours after recovering consciousness, a bluish opalescent appearance being developed. This opacity is not followed by necrosis, and at the end of some months the cornea clears from the periphery towards the centre; the change is believed to be due not to inflammation, but to a true œdema.

FOREIGN UNIVERSITY INTELLIGENCE.

Basle.—Dr. F. Siebenmann has qualified as *docent* in Laryngology and Otiatry.

Bonn.—Professor Fr. Schultze, of Dorpat, has been offered, and has accepted, the chair vacated by the death of Professor Rühle.

Greifswald.—Professor Bardenhauer, of Jena, is to be offered Professor Budge's chair.

Helsingfors.—Dr. Wahlfors has been nominated Professor Extraordinary of Ophthalmology.

Innsbruck.—Dr. Hermann Klotz has been promoted to the rank of Professor Extraordinary.

Jena.—Dr. Wilhelm Biedermann, Extraordinary Professor in Prague, has accepted the chair of Physiology vacated by the resignation of Professor Preyer.

Naples.—It has been decided by the Minister of Education to establish a Professorship of Laryngology.

Rome.—Dr. Pagliani, Professor of Hygiene in Turin, has been appointed Director of the Institute of Experimental Hygiene.

THE Roman cemeteries, recently the subject of animated controversy in some of our lay contemporaries, are about to receive an addition—the Monte Mario on the Janicular, to the north-east of the city, being the spot selected. A hygienic commission has just approved the acquisition of the ground; and one objection to it—namely, the possible filtration from the cemetery into the Acqua Paolina—has been shown to be futile by the special investigations of the engineer, Signor Vescovali, and of the geologist, Signor Zensi. The view commanded from the Monte Mario is in some respects the finest in Europe.

THE Italian Commission on the Prevalence of Pellagra in the Provinces has just concluded its report, with the gratifying announcement that (thanks to the intervention of the State) the disease is greatly on the decrease. In 1882 the *pellagrosi* were 13,663, in 1886 they amounted to 8734, and in 1887 to 6653—and this notwithstanding the augmented population.

THE death is announced of Dr. Josef Fabricius, Professor of Ophthalmology in Buda-Pesth, at the age of fifty-three.

THE Professorship of Anatomy at the Dundee Medical School has been filled by the appointment of Andrew Melville Paterson, M.D., C.M. Edin., M.R.C.S., Lecturer on, and Senior Demonstrator of, Anatomy in the Owens College.

MR. JORDAN LLOYD, M.S.Durh., F.R.C.S.Eng., has been appointed Assessor in Anatomy for the First M.B. (September) Examinations in the University of Durham.

PROFESSOR VIRCHOW is in Milan, writes a correspondent on Sept. 13th, and the leading physicians of the city have given him a more than professional welcome.

Pharmacology and Therapeutics.

CONCENTRATED PREPARATIONS.

WE have had forwarded to us by Messrs. Fletcher, Fletcher, and Stevenson trial specimens of Liquor Aurantii, Buchu, Gentian, &c. Some of these solutions, when diluted eight times with proof spirit, are of the strength and quality of the Pharmacopœial tinctures; others are for preparing infusions by diluting twenty times with distilled water. They are valuable preparations, and most serviceable under many circumstances. We have tested all the preparations: their purity and strength are unquestionable.

TABLOID TRITURATES.

In a neat cigarette-like case sixteen tubes of tabloid triturates can be carried in the coat pocket. These specialities of Messrs. Burroughs, Wellcome, and Co. consist of a small dose of medicine incorporated with sugar of milk, and present the advantage over pills in being much more soluble. The dose, being small, has to be frequently repeated, according to the favourite method of some therapeutists. The tabloids may be dissolved in water at the time of administration, or they may be swallowed like pills with a draught of water. The tabloid triturates seem specially convenient because they are so portable. For children and fastidious patients they are elegant preparations. The annexed is a list of the tabloids in use, with their strength:—Aconite tinct., 1 min.; arsenious acid, $\frac{1}{100}$ and $\frac{1}{50}$ gr.; belladonna tinct., 1 min.; calcium sulphide, $\frac{1}{10}$ gr.; capsicum tinct., 1 min.; digitalis tinct., 1 min.; hydrarg. perchlor., $\frac{1}{100}$ gr.; hydrarg. cum cretæ, $\frac{1}{4}$ gr.; hydrarg. subchlor. (calomel), $\frac{1}{10}$ gr.; hyoscyamus tinct., 1 min.; nux vomica tinct., 1 min.; tinct. camph. co. (paregoric), 2 min. Anti-constipation: aloin, $\frac{1}{2}$ gr.; belladonna ext., $\frac{1}{2}$ gr.; strych., $\frac{1}{30}$ gr.; ipecac., $\frac{1}{12}$ gr. Apomorphia mur., $\frac{1}{10}$ gr.; atropia sulph., $\frac{1}{100}$ gr.; digitalin, $\frac{1}{100}$ gr.; euonymin resin, $\frac{1}{2}$ gr.; hydrarg. iod. rub., $\frac{1}{20}$ gr.; hydrarg. iod. vir., $\frac{1}{4}$ gr.; morphia sulph., $\frac{1}{20}$ and $\frac{1}{4}$ gr.; opium tinct. (laudanum), 2 min.; pilocarpine mur., $\frac{1}{20}$ gr.; podophyllin resin, $\frac{1}{4}$ gr.; santonin, $\frac{1}{2}$ gr.; strophanthus tinct., 2 min.

SULPHATE OF SODA.

A specimen of purified sulphate of soda has been forwarded to us by Mr. J. B. Barnes, of Knightsbridge. Its use was prescribed in a case of marked melancholia with obstinate constipation (two teaspoonfuls in a cup of hot milk and coffee before breakfast). The result was entirely satisfactory. Of 100 parts of this very soluble preparation fifty-three are composed of anhydrous sodium sulphate, the remaining forty-seven being water of crystallisation. The formula is given as $Na_2SO_4 + 7H_2O$.

SOLUBLE ANTISEPTIC LOTION-PELLETS.

Mr. C. H. Milburn, M.B., of Hull, has forwarded to us samples of the above which have been prepared for him by Mr. F. Earle, chemist, of the same town. He writes as follows: "All that has to be done is to put one of these pellets into 10 oz. of water (hot or cold), and on its dissolving, which will occur in less than a minute, one has a lotion of sal alembroth of the strength of 1 in 1000. If that is too strong, more water can be added. Each pellet contains five grains of perchloride of mercury and five grains of chloride of ammonium, held together by a harmless and perfectly soluble basis." They are issued in a tube suitable for the pocket, and at a cheap rate. Mr. Milburn has tried them in surgical and obstetric work, and speaks highly of them. We have also tried them during the last few months and have found them useful; they melt quickly, take up very little space, and are efficient. The bottle, however, in which they are sent out is too brittle, whilst the tabloids rapidly deliquesce if exposed to the air, and will then discolour things in contact with them.

EUCALYPTIA.

This oil of eucalyptus globulus is an exceedingly volatile and aromatic preparation. The sample forwarded to us by Messrs. Burroughs, Wellcome, and Co. was utilised in a case of chronic bronchitis with free expectoration, a teaspoonful being added to half a pint of boiling water; it was used as an inhalation. There is no doubt that it possesses deodorant, stimulant, and antiseptic properties.

CHLORIDE OF METHYLE.

Lubelski of Varsovia has recommended ether sprays along the course of the spine in chorea, and has obtained good results therefrom. Chloride of methyle as a spray has been tried in chorea and in "spinal irritation," where the symptoms consist of pains and multiple neuralgiæ. In certain peripheral nervous affections it is held that the correct treatment is to act upon the nervous centres.

SALOL

has also been used with success in cases of lumbo-abdominal neuralgia due to rheumatism, gout, and uterine affections. It is given internally in doses of from five to ten grains frequently. An ointment is also made of equal parts of salol and vaseline, which is rubbed into the seat of pain.

FERMENTED MILK.

An interesting note by Mr. T. R. Powell in the *Pharmaceutical Journal* gives some reasons for the indigestion and nausea so often produced by a milk diet, even when this diet is desirable. Koumiss is probably retained because coagulation has already taken place; the precipitated casein is in a very fine, almost gelatinous, condition; the carbonic acid is present in a free state, and exerts a sedative action; and the free lactic acid still further stimulates and aids digestion.

SABATIA ANGULARIS.

A member of the gentian family, this plant grows in the United States. All its parts have a bitter, non-astringent flavour. It is employed in America in cases of intermittent and remittent fevers during the intervals of the attacks, and as a tonic. As a bitter stomachic, it is useful in dyspepsia and in convalescence from acute diseases. An infusion may be prepared from thirty grammes of the plant to one litre of water, and the dose is sixty grammes, repeated every two hours during the febrile remission. The powder, in doses of one to four grammes, is also prescribed.

ELIXIR OF BLACK CURRANT.

Mr. Creuse, in the *Druggists' Circular*, recommends an elixir of black currants made from four pounds of currants, alcohol (95 per cent.) four pints, sugar four pounds, water sufficient for sixteen pints. Crush the currants with a wooden pestle, introduce them into a wide-mouthed bottle, add about two pints and a half of alcohol, and set the whole aside for a week, with an occasional agitation. Then press out the liquid, reserve the first maceration, and add to the dregs the remainder of the alcohol. After another week's maceration, express the liquor with strong pressure, mix the two macerates together, add the sugar, complete the measure with water, and after forty-eight hours' contact filter the finished elixir. It contains a certain quantity of free citric acid, and its natural acidulous taste renders it an acceptable vehicle for acid phosphates, pepsin, quinine, and alkaloids generally, also for most iron preparations.

THE INSALUBRIOUS CONDITION OF MADRID.

THE energetic measures Señor Moret has determined to enforce so as to moderate the excessive death-rate at Madrid will be welcomed by all sanitary reformers. The Royal order emanating from the Spanish Ministry of the Interior contains regulations for the inspection of live stock destined for the markets, the supervision of public laundries, the better ventilation and enlargement of the existing hospitals, and the erection of separate hospitals for infectious disease. Something is to be done so as to encourage the growth of trees and shrubs in the capital, the gratuitous medical services for the poor will be increased, and theatres and places of amusement generally will be closed at an earlier hour. The fact is that the death-rate at Madrid this year amounts to 45 in the 1000. During the cholera epidemic of 1885 it was 47·62 per 1000, but the average of the last seven years, including the cholera year, is 41·20 per 1000. This average is in itself scandalous, but when we find that there is no improvement, that, on the contrary, matters are getting worse and worse, there is just cause for alarm and indignation. Señor Moret, who, as ambassador from the Spanish Government, has lived a considerable time in London, evidently feels the stigma attached to Spain in respect to sanitation. He has seen how, in spite of its immense size, its millions of population, its misery and its vices, the great metropolis of London boasts of a death-rate only half as high as that of Madrid. For one death in London there are two in Madrid, and yet there is a far larger proportion of children in London. If it were possible to make due allowance for infants, it would be found that the difference in the death-rate was even greater than what is shown by the figures given above. On the other hand, it can be argued in defence that the population returns are under-estimated. There are in Spain a number of persons who purposely avoid registering the birth of their male children, but all deaths are of necessity registered, otherwise the bodies could not be buried. The object, of course, of avoiding the registration of male children is to escape the compulsory military service. Still this can only make a slight difference in the number of the population, though, when last in Madrid, several eminent authorities assured our representative that this laxity in the registering of births was sufficiently widespread to be worth taking into consideration.

In the high death-rate prevailing in Madrid may be found a solemn warning against headlong and thoughtless sanitary enterprise. It has been the fashion to clamour for sewers, and to conclude that a sewer was the cure for all evils. Theoretically Madrid should be much more healthy than most continental towns. It has an excellent water supply, and cesspools have been abolished. This is more than can be said for Paris. Madrid houses receive their water supply direct from the main; there are no domestic cisterns, and there are no dustbins. This is more than can be said for London. In Madrid there is a bye-law rendering the trapping of soil pipes obligatory. No such law exists in any part of France. In Madrid great carts go through the streets at night. A man rings lustily a big bell, and all the domestic refuse is brought out and carried away, so that there is no dustbin nuisance. The drinking-water supply comes from the sources of the Lozaya, a stream captured in the mountains at a distance of thirty-two miles from Madrid. A part of the canalisation bringing this water to the town is not covered over, and, fearing it might be accidentally contaminated, some 300 soldiers were employed during the great cholera epidemic to watch and prevent anyone approaching. At that time this good supply was not provided to all the houses and public fountains, though doubtless the older and less reliable water sources are now almost completely abandoned. The careless way the water is taken at the fountains should be made the subject of some regulations, as perfectly pure water may be contaminated at the fountain itself by the people who come with dirty buckets &c.

It is not the water supply, but rather the overcrowding, insufficient ventilation, and atrocious drainage that are, we should imagine, the principal causes of the high death-rate. The sewers of Madrid are built with exceptionally porous bricks. The fall is stated to be, as a rule, sufficient; but the inverts encourage accumulations and stagnation. They generally consist of flat flagstones, and are not concave. The sewers are nearly six feet high and more than two feet wide—that is to say, in the majority of cases. There is therefore plenty of space for the accumulation of sewer air, and an immense volume of water would be required to wash out such large sewers, particularly as the inverts do not facilitate a rapid and easy flow. The sewers are not provided with any special means of ventilation; like the sewers of Paris, they ventilate through the openings existing in the streets, and which receive the gutter water. Down these apertures people sometimes throw rubbish, and this gives rise to many offensive odours. Some strict regulations are necessary to check this abuse. A careful watch should be instituted and offenders severely dealt with, so as to stop once and for all such pernicious habits.

The connexion between the houses and the sewers is quite as defective as the sewers themselves. Instead of a small water-tight pipe that can be easily flushed, there is generally a huge square brick drain, big enough, if not to let a man through, at least to admit the passage of a boy. Drains thus constructed generally pass under the house, for the closets are usually at the back of the dwellings, and of course they generate foul air in the basements. The soil pipes are for the most part made of very thin cast iron, and communicate with closets that are supposed to be trapped. It is highly probable, however, that, in spite of the municipal bye-law, there are a great number of closets that are not trapped at all. Even where they are trapped there is no adequate contrivance for the flushing and cleaning out the trap. Finally, no measures are taken to ventilate the soil pipes, and there are no precautions to prevent syphonage.

Such, briefly, are the principal features of the sanitary defects which in Madrid have helped to produce the present scandalous death-rate. To remedy such defects will be a gigantic undertaking. So far as the sewers are concerned, it would be too much to ask that they should be entirely rebuilt. The cheapest way out of the difficulty would be, perhaps, to adopt the separate system. The large sewers might still be employed for carrying away the surface drainage or rain water. Inside these sewers small metalic or earthenware glazed pipes might be placed to receive the sewage proper. The brick drains under the houses must of course be done away with, and pipes substituted, which should be continued above the roofs of the houses for purposes of ventilation. The means of interception between a house and the sewer will of course depend on the system of drainage employed; but some method, involving the separation of the sewage from the rain water, seems self-indicated by the circumstances of the case. This much done, a staff of inspectors must be appointed to visit every house and see that the soil pipe and all other pipes are effectively trapped and ventilated. All this would not involve so great an outlay as has already been incurred in building the abominable sewers that at present exist.

In the poorer quarters of the town a more severe measure must be adopted to prevent overcrowding; and there it is imperatively necessary to close up all private wells. These are generally in the inner courts or *patios* of the tenement dwellings. Even if the water within was not contaminated by the surrounding subsoil drainage, it would be in danger from the dust that falls into the mouths of the wells. Though the inhabitants, as a rule, protest that they do not drink the well water, and only use it for washing, cleaning, &c., there is no reliance to be placed on such assurances. There is evidence to show that such well water was occasionally drunk in Madrid, even during the height of the cholera epidemic. Then an entire system of disinfection and of isolation for stamping out infectious disease has to be organised. All this might be done in Madrid as it has been done in other towns. The Government would doubtless grant the necessary laws, which public opinion and the Legislature would approve, at least in theory. But, in practice, there is a total lack of men possessing the indispensable technical qualification for carrying out such enactments. That is really the greatest of all difficulties which such men as Señor Moret will have to encounter. Perhaps the opening of a school of practical hygiene is the first of all requirements. We do not mean a school for the propagation of mere scientific theories; a good deal of theorising is done already. But a school and a museum are wanted where a corps of nuisance inspectors may be created; men who know how a closet should be built, how a drain pipe may be tested for possible leakage, who will at a glance guess where a pipe is likely to create syphonage,

who are skilled in detecting a waste-water pipe or a bath pipe that is the means of admitting sewer gas into a house. It is these essentially practical questions that are neglected. Theoretically, the necessity of having sewers, and of draining into sewers, has, we have seen, been admitted long ago; but the lack of practical knowledge has led to the building of sewers that are probably the cause of more harm than good.

Finally, the vexed problem of disposing of the sewage has to be solved. At present, it drains into a stagnant ditch, situated at but a short distance from the town. Madrid is built in the centre of a vast and arid plain. It would be easy to create a sewage farm, where the barren soil might soon be rendered fruitful. But then some trouble must be taken to carry the sewer to a considerable distance outside the town, instead of being furnished with an outfall close to dwellings and in proximity to a brook which for the greater part of the year contains no other water than the sewage it receives from Madrid. All these reforms—and, taken together, they make up a considerable programme—present no insurmountable difficulty if the will and the technical knowledge are forthcoming. But it would not be safe to conclude that when all this is accomplished the death-rate of Madrid will be as low as that of other cities that are well drained. The climate is exceptionally bad; and the excessive heat and cold will always have disastrous results. Nevertheless, the death-rate, if proper sanitary works and measures were undertaken, could certainly be reduced to the extent of one-third, if not one-half. This is a result well worth trying for, and no sacrifice is too great when there is the certainty of saving so many lives.

HEALTH OF THE ARMY IN 1886.

No. IV.

THE appendix to the report contains, as usual, a number of cases of more or less interest. There is also the list of operations performed at the Royal Victoria Hospital, Netley, with short abstracts of the most important cases. These amounted to 34 in number, 26 of which were completely and 8 partially successful; there were no deaths. It may be noted that only three of the operations were necessary as a consequence of gunshot wounds. The details of seven of the operations are given by Brigade-Surgeon C. H. Y. Goodwin, the assistant professor of military surgery: two of amputation, and one of the removal of the end of the bone in a conical stump; two excisions of joints; one for traumatic aneurysm of the temporal artery; and one perineal section for urinary fistula. We observe with regret that this is the only contribution from the staff of the medical school. The illness of the late Professor De Chaumont may be a sufficient reason for the absence of any report on the subject of hygiene, but it is not to the credit of the school that no use has been made by the other professors of the abundant material which doubtless is to be found in the hospital.

A report on an outbreak of pythogenic pneumonia, which occurred at Richmond Barracks, Dublin, in 1884, is given by Surgeon-Major Robinson, of the Coldstream Guards. It does not appear why this report has been so long delayed, but, taken in connexion with the recent inquiry into the prevalence of enteric fever in the Royal barracks, it is of importance as showing the very unsatisfactory condition of the barracks in Ireland. Between March 11th, when the epidemic began, and May 25th there were 41 cases, of which 28 occurred in the Scots Guards and 13 in the 1st Battalion East Kent Regiment; 2 of each died. There had been 3 cases of pneumonia in the Scots Guards previously to the outbreak of the epidemic. Mr. Robinson has given the details of the outbreak, and the post-mortem appearances in the 4 fatal cases. He has also discussed the nature of the epidemic, and has given his reasons for concluding that it was pythogenic pneumonia. The Richmond Barracks are stated to have been built on a good plan, but with several objectionable surroundings, and the drainage was reported as bad. This was clearly proved in 1885, when one of the drains, on being opened, "was found to contain solid sewage to a depth of six inches throughout its entire length." Another drain from the canteen "goes underneath the men's barrack rooms. It has not yet been found coming out on the other side"; where its contents go is not explained. The main drain across the barrack square was found to contain "a deposit of semi-fluid sewage to the depth of nearly two feet." It is stated that the drains were all masonry ones, with nearly flat bottoms, and often in bad repair. They have since been replaced by ordinary drain pipes; but we must agree with Mr. Robinson that "the condition described was one calculated to produce the septic poison required to give rise to an epidemic." He is of opinion that, notwithstanding the improvements then made, septic influences are still at work; for in 1886, when again quartered in these barracks, he had in the first half-year 8 cases of pneumonia and 25 of continued fever.

Surgeon Wardroper has given a report on hill diarrhœa in India, which he believes to be more frequently the result of a chill than of malarious origin. But he says: "I regret not to have been able to throw any further light upon the causation of this remarkable lesion, which is to a great extent still wrapped in mystery. That it has a distinct specific cause and origin of its own is more than probable, but that cause remains to be discovered." He has found ipecacuanha, with an occasional dose of castor oil, the most successful remedy, with very careful attention to the diet, which, for some time at least, should be milk "and nothing but milk." He gives some judicious advice as to the clothing of the soldier going to the hills, and as to the avoidance, as far as possible, of anything which would cause a chill.

THE PRISON REPORTS.

THE reports made by the Prison Commissioners for Scotland and for Ireland respectively have been published, and give upon the whole a satisfactory account of the state of the public morals. In both countries the commissioners are able to speak of a reduction in the number of persons in custody and of the punishment which it has been necessary to inflict for the maintenance of order and good behaviour within the prison walls. At the present time, when we have been compelled to witness in the east of London an outbreak of savage violence that is perhaps without a parallel in the annals of metropolitan crime, it is pleasant to find that a comprehensive statistical review points on the whole to a diminution, not only in the number of crimes, but also in their seriousness. Thus the Scottish commissioners remark that, "although the daily average number in custody gets gradually lower, the actual numbers sent into prison do not decrease in the same way. ..... The natural deduction from this is that sentences are becoming shorter and probably the crimes lighter."

With respect to the health of the prisoners under their charge, both bodies report in favourable terms. A serious outbreak of dysentery occurred during the year at Perth, respecting which Sir Douglas Maclagan reports that it "was clearly traceable to a disordered condition of the meat furnished to the class of prisoners affected." Of 117 persons who were attacked, it is stated that only 2 died, and a change in the contract for meat supply was made in consequence of the occurrence. Such an incident as this may well have been accidental, and, seeing that it appears to have been promptly and effectively dealt with, it calls for no particular comment; but it certainly ought not to be necessary for the commissioners to formulate such a complaint as the following from the Irish report: "We have again to express regret at the large number of persons committed while insane to our local prisons, instead of being sent direct to district asylums. The number of cases of insanity dealt with in local prisons during the past year amounted to 85, and of these only 2 cases can be considered to have occurred under circumstances admitting of the possibility of prison life having contributed in any degree towards the development of the disease." It is not alone the inhumanity of subjecting lunatics to the unsuitable discipline of an ordinary prison which calls for remark, but also the waste of power involved in providing by means of makeshift arrangements for their safety. When it is considered how easily and rapidly the separation of criminal lunatics is effected in other parts, it will appear that such negligence on the part of the Irish prison authorities as can alone explain the unfortunate condition of the Irish prisons in this respect must be quite inexcusable.

INQUEST ON A DIPHTHERIA CASE IN ST. PANCRAS.

ON Wednesday last, Dr. George Danford Thomas held an inquest at the Coroner's Court, St. Pancras, on the death of Alice Lydia Eldridge, aged three years. The coroner explained to the jury that the inquest had been held in consequence of the medical attendant having reported that he had suspicions that this death and two others in the same tenement had resulted from defective sanitary arrangements.

The mother gave evidence to the effect that the child had died on Friday, the 4th instant, and on that day Mr. Whitefoord had been called in, but the child was dead before he arrived. The child had been under treatment at University College Hospital. The buildings in which the death occurred are at the back of the Gower-street Station, and are known as Euston-buildings. On Tuesday, the 4th instant, the mother's sister came to stay with her for the night, and stayed the following day. She was suffering from a sore throat, and it was a few days after this that the children became ill with sore throat.

Mr. Whitefoord said he had been called in as stated by the mother, and he found two other children very ill with diphtheria. He attended these children until they died of the disease, and the circumstances of the case led him to suggest to the coroner that an inquiry ought to be made into the cause.

Mr. Mark H. Judge, A.R.I.B.A., sanitary surveyor, said that he had made a careful examination of the buildings, and reported that the drainage was taken into a "common drain" at the back of the buildings, and suggested that, as to this "common drain" and a large gully pit in the road near to the entrance, the sanitary authority should be asked to give evidence.

Mr. Peter Fulton, sanitary inspector for St. Pancras, concurred in the evidence given by Mr. Judge, and said that the common drain and the gully pit were in a satisfactory condition.

Dr. John F. J. Sykes, medical officer of St. Pancras, also concurred in the report of Mr. Judge, and said that, finding no cause for the outbreak in the sanitary condition of the buildings, he had made inquiries, which led to his visiting the house in Sutherland-avenue, Paddington, where the aunt of the children had been living. He found that, not only had the aunt had diphtheria, but that there had been four other cases in the house at the same time. He was persuaded that the disease had been brought from the house in Sutherland-avenue to Euston-buildings.

The coroner, in summing up, suggested to the jury that they might consider the desirability of adding a rider to their verdict calling attention to the importance of hospital accommodation being provided for cases of diphtheria.

The jury, after consultation, returned the following verdict: "That the deceased expired from diphtheria, which they say is from a preventable cause; and they are further of opinion that the disease, having terminated fatally in three cases in the same family, was introduced by a servant who had just left her situation in Sutherland-avenue, Paddington, suffering from the same disease from which inmates of the same house were also suffering; and the jurors further say that the sanitary arrangements of Euston-buildings are in good order. They have also heard in evidence that there is no hospital for the reception of diphtheritic patients, and they would strongly urge upon the Metropolitan Asylums Board the necessity of making provision for such cases at once; and they further desire to call the special attention of the Local Government Board to the case, in order that immediate action may be taken."

FOOTBALL CASUALTIES.—During a football match on Saturday last, between the St. Helens Recreation and Aspull (A teams), John Pendlebury had his collar bone broken. In a match at Parr, between the Globe Recreation and Thatto Heath, a player named Hart had his leg fractured. A man named Howard sprained his knee while playing for St. Helens against the Rochdale Hornets. Stewart Milne, captain of a local team, while playing a match at Cowie, Stonehaven, last week, sustained a bad dislocation of his collar bone.

Public Health and Poor Law.

LOCAL GOVERNMENT DEPARTMENT.

REPORTS OF MEDICAL OFFICERS OF HEALTH.

Sittingbourne Urban District.—Notwithstanding some prevalence of enteric fever and of scarlatina, Dr. Sutton reports a death-rate of 14·7 per 1000 living in this urban district. The infectious hospital rendered useful service; but some parents had no medical attendance, and the cases in their houses did not become known in time; whilst others, for reasons of their own, kept the disease a secret, and even avoided, until the occurrence was detected, applying for disinfectants. In all, eleven patients were admitted for scarlatina, and twenty-one for enteric fever, the only deaths being two fatal cases of the latter disease. Care is being given in the district to the sanitary state of the various dairies, cowsheds, and slaughterhouses, and nuisance removal is being steadily maintained.

Milton Rural District.—In this district Dr. Sutton states that the death-rate from all causes in 1887 was 12·11 per 1000, and apart from deaths amongst outside cases of infectious disease in the Sittingbourne and Milton joint hospital, which lies in this rural district, the zymotic mortality was very trivial. Wells found to be polluted have been closed, and, where necessary, proceedings have been threatened and taken to secure abatement of nuisances, dampness of houses, and other conditions tending to injure health. Extension of the Sittingbourne waterworks supply is going on, and thus one of the greatest sources of danger to a rural district—namely, resort to shallow wells—is steadily being diminished.

Epping Rural District.—A detailed account is given by Mr. T. Fowler as to the occurrences of infectious disease during 1887, together with the action taken in each case and the result attained, the principal diseases prevalent having been scarlatina and enteric fever. The district is now much more free than it was from diphtheria; improvements which have taken place by opening up the forest about dwellings, together with increased sunlight and freedom from dampness, being believed to have had a restraining influence upon the disease. Water supply is steadily improving in the district, the East London supply being gradually extended. New works of sewerage have also been in progress throughout Chingford parish, and the cesspools have been filled in. So, also, similar improvements are going on at Buckhurst Hill and Chigwell.

Basford Rural District.—This district contains a number of populous places, and its inhabitants are now estimated at over 51,000. The vital statistics for 1887 are carefully discussed by Dr. Boobbyer, the total death-rate being 14·7 per 1000. Of the so-called zymotic diseases there were 18 deaths from enteric fever and 27 from diarrhœa, but the rate, both as regards separate diseases and as a whole, is decidedly below the average. Each of the several outbreaks of infectious disease is fully reported on, and an account is given of the preventive measures adopted. There is also an excellent account of the current sanitary work, which includes an explanation of the principles on which overcrowding needs to be dealt with.

Birkenhead Urban District.—In dealing at length with the vital statistics of this borough, Mr. Francis Vacher gives the estimated population at 97,703, the number of persons per acre as 25·3, the birth-rate per 1000 as 32·35, and the death-rate from all causes as 21·01. The zymotic rate was 3·16 per 1000, which is excessive, the main cause of the excess being a fatality from scarlatina and measles. Fever was below the average in point of mortality; typhus caused 3 deaths, but by the aid of the fever hospital this disease was checked. No less than 2435 cases of infectious disease were notified under the local Act dealing with this subject; but of these only 58 were isolated in the infectious hospital. A special report on the working of the system of compulsory notification is included in the annual report, and amongst the practical difficulties met with in its administration there is one which is due to a charge being made for disinfecting bedding &c., an arrangement under which people do their utmost to secure certificates from their medical attendants to the effect that such disinfection has already been satisfactorily carried out. To some extent

this difficulty has been met, but the proper practice of using a public staff and a public disinfector, the cost of which is defrayed out of the rates, for public purposes, and apart from payments, has not yet been resorted to. Speaking generally, Mr. Vacher is of opinion that the mortality from diseases required to be notified has much decreased since 1882. Householders, it is stated, rarely notify direct to the authority, but the requirement that they should do so is still regarded as necessary to meet those cases in which no duly qualified medical practitioner is called in; and it is regarded as otherwise helpful, because it probably assists the medical practitioner by making easy and simple that which otherwise might be an invidious task.

Portsmouth Urban District.—Beyond seeing the ultimate scarring of the faces of such unvaccinated persons as contract small-pox but escape death, the general public have little notion of the hideous character of that disease as it appears when uncontrolled by vaccination, and Dr. Mumby seeks to inculcate the lesson of the desirability of vaccination by reproducing in his report photographs of the faces of two patients at the eleventh day of the disease. The unvaccinated patient exhibits the well-known features which result from confluent small-pox; the face of the vaccinated patient of itself tells of the lightness of his attack. Every case, except two, was taken to the infectious hospital, and this isolation, aided by vaccination, rapidly put an end to the epidemic which occurred. As regards enteric fever, 1249 cases were reported in 1886, 554 in 1887; the corresponding number of deaths being 124 and 53. Kingston suffered exceptionally, and Dr. Mumby cannot dissociate this from the erection of houses on sites where formerly lay mounds of town refuse, deposited there before being used for brick-burning. Faulty sewers have also been responsible for its occurrence; but the new system will, it is hoped, before long, secure a large and substantial abatement of this preventable disease. The general death-rate in a population of 137,916 was 19·45 per 1000, it having varied between 9·48 in the Southsea and 26·69 in the Kingston divisions.

Margate Urban District.—Quarterly returns for comparatively small populations cannot, as a rule, be taken alone as having much weight in the sanitary history of a place; but in view of the special circumstances which have attached to Margate, we note that for the second quarter of this year the death-rate stood at only 12·4 per 1000, and the zymotic rate at 0·6. This, if in any degree maintained, would be a valuable record; but, standing alone, its significance must not be over-rated. Fortunately, there was no death from typhoid fever between April and August, both inclusive, and we hope the same immunity will be maintained during the autumn months, which are those when that disease tends mostly to prevail. Dr. Scartliff refers to the value of the infectious hospital. Such an institution is a great safeguard, but we can hardly apply the term "excellent" to a hospital which has for years past been admitted to need amendment in several important respects.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

In twenty-eight of the largest English towns 5610 births and 3187 deaths were registered during the week ending Sept. 15th. The annual rate of mortality, which had been 18·1, 17·5, and 17·8 per 1000 in the preceding three weeks, declined again last week to 17·7. During the first eleven weeks of the current quarter the death-rate in these towns averaged but 16·7 per 1000, and was 4·4 below the mean rate in the corresponding periods of the ten years 1878-87. The lowest rates in these towns last week were 13·2 in Oldham, 13·4 in Wolverhampton, 13·9 in Leicester, and 14·2 in Hull and in Sunderland. The rates in the other towns ranged upwards to 25·7 in Manchester, 25·8 in Preston, 25·9 in Blackburn, and 26·2 in Norwich. The deaths referred to the principal zymotic diseases, which had been 582 and 638 in the preceding two weeks, were last week 622; they included 391 from diarrhœa, 67 from whooping-cough, 57 from scarlet fever, 39 from measles, 35 from diphtheria, 32 from "fever" (principally enteric), and only 1 from small-pox. The lowest death-rates last week from the aggregate of these zymotic diseases were recorded in Oldham and Huddersfield, and the highest rates in Leeds, Norwich, Brighton, and Preston. Diarrhœa showed the greatest mortality in Brighton, Leeds, Sheffield, Leicester, and Preston; whooping-cough, in Halifax and Norwich; scarlet fever, in Derby and Blackburn; and "fever" in Birkenhead. The mortality from measles was, generally speaking, low. The 35 deaths from diphtheria included 18 in London, 3 in Manchester, 2 in Brighton, 2 in Portsmouth, 2 in Salford, and 2 in Sheffield. Small-pox caused one death in Preston, but not one in London or in any of the twenty-six other large towns. The Metropolitan Asylum Hospitals and the Highgate Small-pox Hospital contained only 1 small-pox patient at the end of the week. The number of scarlet fever patients in the Metropolitan Asylum Hospitals and in the London Fever Hospital was 826 at the end of the week, against numbers increasing from 774 to 805 in the preceding three weeks; 93 cases were admitted during the week, against 93 and 79 in the previous two weeks. The deaths referred to diseases of the respiratory organs in London, which had been 130 and 148 in the preceding two weeks, further rose last week to 184, and exceeded the corrected average by 2. The causes of 47, or 1·5 per cent., of the deaths in the twenty-eight towns last week were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Bristol, Hull, Leicester, Newcastle-upon-Tyne, and Portsmouth, and in seven other smaller towns. The largest proportions of uncertified deaths were registered in Huddersfield, Liverpool, and Manchester.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had declined in the four preceding weeks from 17·3 to 16·0, was again 16·0 in the week ending Sept. 15th; this rate was 1·7 below the mean rate during the same week in the twenty-eight large English towns. The rates in these Scotch towns ranged last week from 10·1 and 13·9 in Greenock and Edinburgh, to 22·4 in Perth and 26·1 in Paisley. The 405 deaths in the eight towns corresponded with the number in the previous week, and included 29 which were referred to diarrhœa, 8 to "fever" (principally enteric), 7 to whooping-cough, 4 to scarlet fever, 4 to measles, 3 to diphtheria, and not one to small-pox; in all, 55 deaths resulted from these principal zymotic diseases, against 42, 44, and 51 in the preceding three weeks. These 55 deaths were equal to an annual rate of 2·2 per 1000, which was 1·3 below the mean rate from the same diseases in the twenty-eight English towns. The deaths attributed to diarrhœa, which had been 16 and 25 in the preceding two weeks, further rose last week to 29, but were 26 below the number referred to the same cause in the corresponding week of last year; 15 occurred in Glasgow, 5 in Edinburgh, and 3 in Dundee. The 8 deaths referred to "fever" showed an increase of 6 upon the number in the previous week, and included 2 in Edinburgh, 2 in Aberdeen, and 2 in Paisley. Five of the 7 deaths from whooping-cough, 3 of the 4 from scarlet fever, and 2 of the 3 from diphtheria were returned in Glasgow. The deaths referred to acute diseases of the respiratory organs in the eight towns, which had been 56 and 71 in the previous two weeks, were last week 69, and were 8 below the number in the corresponding week of last year. The causes of 45, or more than 11 per cent., of the deaths registered in the eight towns during the week were not certified.

HEALTH OF DUBLIN.

The rate of mortality in Dublin, which had been 17·9, 20·4, and 21·7 per 1000 in the preceding three weeks, declined again to 19·4 in the week ending Sept. 15th. During the first eleven weeks of the current quarter the death-rate in the city averaged 19·9 per 1000, the mean rate during the same period being 16·2 in London and 15·5 in Edinburgh. The 131 deaths in Dublin showed a decline of 16 from the number in the previous week; they included 10 which were referred to diarrhœa, 3 to scarlet fever, 3 to whooping-cough, 1 to measles, 1 to "fever" (typhus, enteric, or ill-defined), and not one either to small-pox or diphtheria. Thus 18 deaths resulted from these principal zymotic diseases, against 19 and 21 in the preceding two weeks; these were equal to an annual rate of 2·7 per 1000, the rate from the same diseases being 2·9 in London and 1·4 in Edinburgh. The deaths attributed to diarrhœa, which had been 7 and 12 in the previous two weeks, were last week 10. The 3 fatal cases both of scarlet fever and of whooping-cough showed a slight increase upon recent weekly numbers, while the fatality from "fever"

was smaller than in any recent week. Three deaths from violence and only 1 inquest case were registered; and 31, or nearly a quarter, of the deaths occurred in public institutions. The causes of 26, or nearly 20 per cent., of the deaths in the city were not certified.

SPANISH PUBLIC HEALTH STATISTICS.

Among the many recent evidences of progress in Spain it is satisfactory to note an awakening interest in public health matters, and generally in vital statistics, without which effective sanitary administration is impossible. A huge volume of more than a thousand pages has recently been issued by the Geographical and Statistical Institute of Spain, which contains, among various statistical information relating to the movement of the population, tables showing the marriage-rate, birth-rate, and death-rate in that country during the ten years 1861-70, and in the more recent seven years 1878-84. Between 1870 and 1878 the government of the country was so disorganised that no vital statistics for those years have ever been published. The enumerated population of Spain at the last census in 1877 was rather more than 16,500,000, showing an unusual equality between the sexes, there being only 104 females to each 100 males. The marriage-rate, or rate of persons married, which had been equal to 15·2 per 1000 in the ten years 1861-70, declined to 13·0 in the seven more recent years 1878-84; it may be noted, however, that the marriage rate in Spain touched the lowest point (12·0) in 1882, and that it had increased to 13·4 in 1884. The birth-rate has in recent years also declined, but not in the same proportion as the marriage-rate; the birth-rate, which averaged 37·5 in the ten years 1861-70, was 36·6 in the seven years 1878-84. The proportion of illegitimate births, which had been 5·50 per cent. of the total births in the earlier of these two periods, declined to 4·67 in the later period; the proportion of illegitimate births in England is now about 4·80 per cent., but in other European countries it ranges from 1·22 in Greece to 15·24 per cent. in Bavaria. The proportion of still-births in Spain in the five years 1878-82 is stated to have been but 1·32 per cent.; but the accuracy of this ratio may well be doubted, since in most of the other European countries in which statistics of still-birth are published the proportion ranges between 4 and 5 per cent. The mean annual death-rate in Spain in the ten years 1861-70 was 30·1 per 1000, while in the more recent seven years the rate rose to 31·0; in this last period the lowest rate was 30·2 in 1880, and the highest 33·1 in 1883. Without more precise knowledge of the system of registration prevailing in Spain than that supplied by the volume before us, it is impossible to estimate correctly the true value of these vital statistics; but it may safely be assumed that the death-rate is not overstated. It may be stated that the population of the kingdom in each year since the last census in 1877 appears to have been estimated by the addition from time to time of the excess of registered births over registered deaths, no account being taken of the effect of emigration and immigration upon the population of the country, which, however, may not very seriously affect the population of the whole kingdom. The serious import of a mean annual death-rate of 31·0 per 1000 in Spain during the seven years 1878-84 will not, it may be hoped, fail to impress upon the Government of that country the urgent necessity for sanitary reform, for the highest death-rate in England and Wales during the last fifty years was 25·1 in 1849, when a severe epidemic of Asiatic cholera prevailed. A mean death-rate of 31 per 1000 for the whole of Spain, moreover, necessarily implies that rates of mortality from 40 to 50 per 1000 prevail in some of the urban aggregations, for we may be assured that in the sparsely populated rural districts the death-rates cannot nearly approach 31 per 1000.

POPULATION OF ST. PETERSBURG.

The population of St. Petersburg entitles it to rank as the fourth European city, London, Paris, and Berlin being the only cities that in this respect can claim precedence to it. A census of the population of St. Petersburg taken at the end of June last resulted in the enumeration of 842,883 persons, showing a decline of 85,133, or more than 10 per cent., from the enumerated number at the previous census in 1881. It should be stated that the census in 1881 was taken in the winter, which, it is urged, partially accounts for the decline of population. It would appear to be somewhat doubtful, however, whether the population of St. Petersburg is larger in winter than in summer, for it is admitted that the census number enumerated in June last includes 41,696 workmen from the provinces engaged on building works which can only be carried on in the summer. That the population of the city is declining has long been admitted, moreover, by the municipal authorities. A noticeable feature of the St. Petersburg population is the excess of males, in striking contrast to the excess of females in nearly all other European cities. Of the population enumerated in June last, the males were in the proportion of 138 to 100 females; and, of persons aged upwards of sixteen years, the males were as 146 to 100 females. In this remarkable excess of males the sex proportion of the St. Petersburg population somewhat resembles that of the great Indian cities, where the males almost invariably show a large excess. In the population of London, enumerated at the last census, in 1881, the males were but 89 to each 100 of females.

Correspondence.

"Audi alteram partem."

THE USE OF ANÆSTHETICS.

To the Editors of THE LANCET.

SIRS,—As a subscriber to and a reader of THE LANCET since I entered the profession, I ask your permission to state some objections to your leader on chloroform, which appeared in your issue of the 15th inst. Your paper is so much read both by the profession and the lay public, and your opinion on all that concerns the art of medicine is so much valued, that any exaggeration on your part would be productive of serious results, particularly so if such exaggeration is likely to alarm the public and prejudice them against a powerful and, I think, most valuable anæsthetic. If, by exciting a popular prejudice against chloroform, you make the practice of operative surgery more difficult, you do a grievous wrong to the surgeon, and you inflict an injury on the public.

The following passage appears to me as particularly objectionable: "We have before us the records of at least six deaths which appear unnecessary, since in none of the instances does it transpire that any cause existed which prevented the employment of ether rather than chloroform." And a little further on the following passage, which you quote as if dissatisfied with its accuracy: "The patient 'succumbed owing to failure of the heart, brought about by struggling whilst being chloroformed.'" And you finally conclude that "beyond cavil chloroform is a dangerous anæsthetic." May not some of the six deaths have been due to idiosyncrasy? Experience has taught surgeons that there is an ether as well as a chloroform idiosyncrasy. Can none of the six deaths be ascribed to incompetence of the administrator, or to shock from imperfect anæsthesia? Does not the fact of struggling during the administration of the agent tell of want of due care being taken not to hurry the chloroform narcosis? Do you think that because six persons died under chloroform anæsthesia you may fairly imply that if ether had been used they would all six be alive to-day? You set up the question of ether *versus* chloroform because of "the ever-increasing mortality from" the latter. If the agent was of itself dangerous, the mortality would have been equally high, if not more so, when it was first introduced as an anæsthetic by Professor Ives, of Yale College, in 1832. More care is now taken with its purification, and we are better able to combat untoward symptoms. Therefore, if we have "an ever-increasing mortality" from its use, the increase must be due to incompetent administrators.

You give, in support of your unqualified condemnation of chloroform, a summary of Nothnagel's and Ungar's experiments on rabbits and frogs, and I place before your readers some extracts from two very valuable pamphlets that appeared in America during the autumn of last year, which, in my opinion, prove beyond all cavil that chloroform is the safest and best of anæsthetics. The pamphlets to which I refer are: "The Choice of General Anæsthetics," by Hunter M'Guire, M.D., LL.D., Richmond, Virginia, being a reprint of a paper read before the Medical Society of Virginia in

October, 1887; and "Chloroform, the best of Anæsthetics," by Julian J. Chisolm, M.D., being a reprint of a paper read before the Baltimore Academy of Medicine.

Dr. M'Guire, whose experience as medical director of the 2nd Army Corps of the Army of Northern Virginia has been very large, writes: "In the beginning of this paper I said that I thought chloroform the safer agent in cardiac troubles. I wish to except from this class a nervously weak heart. In organic valvular disease of the heart, with the usual compensative muscular hypertrophy, I have given chloroform hundreds of times, and never had cause for alarm. On the contrary, the heart's action became usually more quiet and regular, and chloroform is safer here than ether. But in a heart weak from fatty degeneration, or from loss of blood, or great anæmia from other causes, any anæsthetic is hazardous; but chloroform, I believe, is more dangerous than ether." And again: "In all operations about the face or throat, where blood or other fluids may escape into the windpipe, ether is the more dangerous, and chloroform the safer agent to use. I do not think I ever saw the irritability of the larynx or trachea entirely lost in anæsthesia from chloroform, but I have seen this happen in ether cases; the sensibility or reflex irritability is for the time abolished, and foreign substances easily find their way into the windpipe." Further on the following sentence occurs: "It is a significant fact, too, that Nussbaum has seen in military life 40,000 administrations of chloroform without an accident; and that in the Confederate Army Corps to which I was attached as medical director chloroform was given 28,000 times without a death ascribed to its use." Of ether, Dr. M'Guire writes: "In ether, several minutes after the vapour is taken away and all danger from the anæsthetic is supposed to have passed, when all ether vapour we would think had escaped from the lungs, dangerous symptoms suddenly present themselves, from which the patient is with difficulty rescued, or even death itself takes place. Or, again, hours, or even days, after ether has been given, acute nephritis or pneumonia, directly traceable to the ether, occurs, threatening the life or causing the death of the patient." Further, of chloroform he writes: "In either young or old, or in cases where cardiac, renal, or pulmonary trouble is suspected, as a rule, I think, chloroform is safer." Such is the opinion of this great surgeon, who sums up the evidence with the impartiality of an English judge and the candour of a Virginian gentleman.

Dr. Chisolm, whose pamphlet, "Chloroform, the best of Anæsthetics," from which I quote, was issued this year, writes: "At the Edinburgh Infirmary, during a period of twenty-eight years from the introduction of chloroform into surgical practice, only two deaths had been attributed to chloroform, which, according to Kerr, is one death in 36,500 administrations. Elser of Strasburg had used chloroform 16,000 times, and had never seen a fatal case; Kidd of London 10,000 times, without a death; Dr. Bardeleben of Berlin 30,000 times before meeting with a death; French surgeons in the Crimea 30,000 cases, and not one fatal issue; English surgeons in the Crimea 12,000 times, with one single death reported as attributed to it; M'Guire, of Jackson's corps, 28,000 times, and no death; Richardson had seen it used in the London hospitals 15,000 times before he met with the first fatal case; Billroth of Vienna 12,500 times before he met with his first accident." He further states that in the Federal army it was administered in 80,000 cases. In thirty-seven cases fatal results have been ascribed to its use. The Federal authorities make the following comment: "Considering the great number of cases in which chloroform was applied principally during and after the exciting circumstances of a battle, when expedition was a matter of necessity, it is remarkable that not more cases of death from this agent have been recorded. With what justice the fatal issue in these cases here cited is chargeable to the anæsthetics the reader must judge for himself." To this Dr. Chisolm adds his own experience of fully 10,000 cases without a single death. He collected an array of 300,000 administrations of chloroform, with forty-three deaths; even attributing them all to idiosyncrasy, which calls for a most unbounded charity, and we only have one death in 70,000 cases. Can any stronger proof of the excessive rarity of the fatal idiosyncrasy in chloroform be needed?" And just one more quotation: "Bronchial troubles are also (with renal) considered antagonistic to the safe administration of sulphuric ether, not directly, but indirectly. In such cases, after the operation has been completed and the resuscitated patient has been put to bed a fatal pneumonia has developed, which follows too often the administration of ether to be considered a mere coincidence. This fatal pneumonia has not been noticed as a sequel of chloroform anæsthesia. Using chloroform exclusively, I have never thought it necessary to examine the urine or the chest for lung diseases, and have had no occasion to regret my seeming neglect in this connexion. From the standpoint of my own personal experience, I know of no organic lesion which contra-indicates the careful and thorough administration of chloroform. Chloroform, when judiciously used, is one of the safest active remedies of the materia medica, supplying nearly every good and avoiding nearly every danger."

Allow me just to add that from the earliest days of surgery anæsthetics were known, and that with and without anæsthetics brain and abdominal surgery were practised. Moulins, O'Hallaron, and Dupuytren made a reputation in the former, and McDowell of Kentucky revived laparotomy, following—perhaps unconsciously—the incisions pictured in the "Armentarium Chirurgicum" of Senectetus, of 1661; and the successes of Anthony de Pozzi and Fontanus, both of whom excised successfully the spleen, are recorded in the second volume of the folio edition of Morgagni, and they may also be found in William Cooke's abridged translation; and I have no doubt that you are aware of the fact that, in 1549, Zaccharelli and Fioravanti at Naples successfully performed splenectomy. Anæsthetics gradually became disused during the eighteenth century; but, as late as 1775, Dr. Colin Hossack of Colchester, physician to Frederick, Prince of Wales, translated the formula of Boerhaave's celebrated anæsthetic powder, of which half was "to be taken one hour before the operation." But I quite agree with your article that Guthrie's discovery, chloroform, facilitates surgery and allows the operator more leisure for the completion of the peritoneal toilet. I, however, hold that the high mortality, when it does occur, is due to the faulty administration of the chloroform, and cannot rightly be ascribed to any unsuitability of the agent as the best of anæsthetics. I am, Sirs, yours obediently,

GEORGE FOY, F.R.C.S.

Lower Gardiner-street, Dublin, Sept. 5th, 1888.

*** Mr. Foy's letter affords proof of the accuracy of our remarks; while his quotations, when read by the light of more recent knowledge of the subject, invalidate Mr. Foy's argument. Those who are familiar with American methods of ether-giving will naturally repudiate any conclusions based upon the experience of American surgeons, since the routine drenching with ether in vogue in the United States has no counterpart amongst skilled anæsthetists here. Sequelæ such as those described by Dr. McGuire are practically unknown in England. Dr. Chisolm may not have lost any patients from chloroform, but he has published accounts of several cases in which he confesses he thought death was imminent. The statistics quoted by Mr. Foy, and borrowed from Drs. McGuire and Chisolm, are really out of date, and unhappily give too low a percentage of deaths. Even accepting them, they show a far higher death-rate than can be obtained from ether. It matters nothing, if the patient dies, whether we attribute the fatality to "idiosyncrasy," "incompetence," or what not, for by Mr. Foy's own showing the same conditions obtain for ether as for chloroform, and yet far fewer deaths result from the former than from the latter agent. Putting aside statistics and individual preferences for chloroform, we are bound to admit its dangers as compared with ether, by the proofs given of its physiological action in mammals.—ED. L.

THE CONTAGIOUS DISEASES ACTS.

To the Editors of THE LANCET.

SIRS,—When trying to promote legislation to protect the community from venereal disease, it is a mistake to point to men in the army and navy as the chief sufferers, for those who denounce all attempts to hold the State responsible for the evils of prostitution care nothing for the sufferings of soldiers and sailors, and even maintain that in the interests of liberty every man must be free to contract disease or

not as he pleases; and, besides, the "unco guid," in their detestable pharisaical malice, will even rejoice to learn that the victim to vice is the victim to disease, while many of those who are not blinded by self-righteous brutality will argue that the good old principle, "let the buyer beware," must hold good in all the dealings between adults. It is a mistake to appeal to the pockets of the ratepayers and to urge the magnitude of the national loss from disablement of soldiers and sailors by disease, for the opponents of legislation have then the advantage of posing as the champions of morality against those who would treat virtue and liberty as mere questions of money or expediency, and they will rightly denounce all attempts to decide questions of morality by a computation of the number of pounds to be gained or lost. It is a mistake to lay all the blame for defective legislation on the public or the Government, for the public can only be held responsible according to their knowledge, and the Government can only act as representatives of the people. It is also a mistake to ask for special legislation for the prevention of any particular disease, since it is similar to a request for special legislation to prevent one man from assaulting another with a hammer.

Having pointed out the methods of procedure which cannot be advocated with success or reason, it is necessary to lay down those which cannot be objected to by any intelligent man. The fact must be made known that thousands of innocent women and children in London are at the present moment suffering from the effects of syphilis, although they are very seldom aware of the cause of all their misery. The healthy blooming girl marries a man who is apparently in perfect health, and yet within a year of marriage she has a miscarriage of a putrid child, or she has a pining shrivelled child prematurely born, or she has an apparently healthy child which in a few weeks becomes afflicted with some skin disease, and probably remains a pallid, unhealthy victim of vice for life; and no matter how sound the constitution of the mother may have been, she has in some way suffered injury from which she will never perfectly recover. How often is the husband or the wife or the children taught the truth by the medical practitioner? I have not the moral courage to tell some people plainly that they are the victims of syphilis, and if I did, an action for libel might result. The real culprit is the medical profession as a body, for it has kept the public in ignorance of the facts, and has thrown a cloud of mystery around venereal diseases as if they must belong to some different category from all other diseases. The sufferers from syphilis in London are in every street and in every grade of society, but in most cases the symptoms are so slight that the chronic skin diseases, the chronic eye diseases, the miscarriages, and the pallid feeble children are supposed to be sent by Providence. I attempted two years ago, in my work on "Disease and Sin," to convince both divinity and medical students that it is blasphemy to say that any disease is sent by God, and that everyone who assists to maintain a condition of disease, or who neglects to assist in preventing it, is not only a sinner but a criminal. The man or woman who propagates a contagious disease, the preacher who interferes with any means of prevention, and the Government which neglects to adopt all practicable means of prevention, are all to be regarded as engaged in warfare against the happiness of mankind. We require honesty enough to call a spade a spade, and when a man dies from small-pox or typhoid fever, instead of profanely saying that it was the will of God that the death should occur, we ought to demand an investigation in order to discover the cause.

The demand for special legislation is illogical, since a man is a criminal whether he injures another with a hammer, or with vitriol, or with poison; and everyone is a criminal who knowingly injures another with small-pox, or with scarlatina, or with syphilis. The general principle ought to be laid down that he who wilfully or culpably injures another is a criminal, who must be liable to damages for the injury, and must be punished by imprisonment or fine besides. The punishment must be in proportion to the injury inflicted and to the power over the cause, so that, while the propagator of scarlatina may sometimes be dismissed without punishment owing to his inability to know with certainty that he was a propagator of infective material, there can be no excuse taken for him who disfigures another with small-pox. The victim of scarlatina or small-pox may enjoy as good health for the remainder of his life as if he had never suffered from disease, and his children will be unaffected; but the propagator of syphilis is guilty of the greatest crime that can be perpetrated, since the constitution of the victim is not only ruined, but his children are often murdered and the happiness of his wife destroyed. Hence it is the plain duty of every civilised Government to sentence the man or woman who propagates syphilis to a prolonged period of penal servitude; and every man or woman who attempts to inflict the grievous bodily injury of syphilis upon the other, whether by solicitation or by yielding to solicitation, ought to receive a punishment of not less than one year's imprisonment with hard labour. Any man or woman who is found suffering from syphilis, and who has wilfully neglected to report the evil to the constituted authorities, ought to be punished. Thousands of children in London are calling to Heaven for vengeance against preachers, doctors, legislators, and parents who by their ignorance, perversity, or neglect are guilty of murdering the innocent by years of torture, and of denying to future generations the health which Providence intended should be the birthright of every human being. The remedy for the evil is so plain and simple that the nation which does not adopt it is not worthy of the blessing of health; but it seems that thousands of years of evolution and education cannot produce a man with as much common sense as Moses.

I am, Sirs, yours very truly,

Sept. 15th, 1888. A MEDICAL MUSER

To the Editors of THE LANCET.

SIRS,—As you have given publicity to a portion of my letter, and have criticised it rather severely, I ask you to publish this reply, as otherwise some misunderstanding as to my opinions may arise. I think, if you refer to my letter, you will see that I consider "that nothing could be done on the basis of the late Acts during the existence of the present House of Commons," not that I consider that nothing can ever be done. I cannot admit that I have fallen into two errors. With regard to the first of these, I do not think that it is untrue "that the Acts were directed against one sex—i.e., the female." Anyway, they were largely supposed to be so, and this was the principal cause of the successful opposition to them. Also, I do not accept the theory of spontaneous generation, and therefore for the present I must decline to admit that the "greater amount of venereal disease is created by prostitutes." No woman can create specific disease, and she cannot even "propagate" it unless she has herself been infected by a previously diseased person, presumably a man. Again, I submit that it is not an "untenable proposition" that "men are equally guilty with prostitutes in spreading disease." Anyone who knows how comparatively respectable servants girls are infected by soldiers and sailors would consider that the men are more guilty; and as these men are not driven by want of money to "spread disease," morally they are much worse than the prostitute, who is condemned to "spread disease" or starve. I say, without fear of contradiction, that if the men of the army and navy were periodically examined, especially before being allowed leave, an immense reduction of disease would be effected.

I am, Sirs, your obedient servant,

Southsea, Sept. 15th, 1888. ALBERT BENTHALL.

TREATMENT OF ECZEMA.

To the Editors of THE LANCET.

SIRS,—In June of this year a communication by me appeared in THE LANCET on the treatment of eczema simplex as affecting the fingers and backs of the hands especially. Since then I have had suggested to me, and tried with excellent results, a new method of treating eczema of the palms of the hand and soles of the feet. This I wish strongly to commend to the consideration of the profession. In eczema sclerosum we find the skin thickened and hard. Large dry flakes of epidermis are firmly adherent to the corium below, projecting only at their periphery. The primary lesion, however, is *always* a vesicle; but this is seldom seen, its life history being very evanescent. Let us follow the plan adopted in the article referred to, and proceed to consider—

1. *The medicinal treatment.*—(*a*) External. Well soak the hands for several minutes in soft hot water; cleanse them with "lanoline eucalyptine," or lanoline coal-tar soap. Then get some fresh hot water. Now place on the palms

some of the animal fat, and rub it well in with a piece of pumicestone. However brittle and hard the epidermis may be, it is quickly removed, sometimes in large pieces, leaving the subjacent skin smooth, soft, and supple. This causes no contracture of the skin, and consequently no cracks or fissures. The skin does not accumulate for twenty-four hours, more or less. We repeat this procedure every second or third day, after each sitting smearing the surface with a little napthol lanoline pomade. The same object as the above can be achieved by using the salicylic plaster muslin of Unna, but it has this fatal disadvantage—it requires constant application, whereas my method requires no strapping or bandage whatever. (*b*) Internal. Small doses of liquor potassæ—half a drachm or less soon after food—prove of great service. How this acts I am not in a position to explain. It may be that it helps the assimilation of the food by emulsifying fats, or perhaps it prevents those fermentative changes which I believe take place in the blood of many eczematous patients.

2. *Dietetic medication.*—Regular meals should be adopted, and in the majority of cases three a day. Tea should be partaken of only once a day, cocoa supplanting it at breakfast. Meat, not with too much indigestible fat to it, and with fresh vegetables, followed by fruit, should be allowed once, and this at dinner. Take old bread in place of potatoes, and brown instead of white. It matters not what the diathesis of the patient—he should avoid alcohol in any form, all pastry, sugar, and such other circulatory excitants.

3. *The hygienic and general indications* are to clothe the sufferer in woollen garments, whatever the season, the light materials being worn in summer. An equable temperature of the whole body is thus maintained, and the deficient fluid secretions of the hand accounted for. Proper and sufficient exercise must be indulged in, a pair of kid gloves being worn during the day. The patient should sleep in a well-aired and lofty room, with the window slightly open, in a woollen sleeping suit. Some cases have undoubtedly some relation to incontinence in sexual matters; therefore the moral surroundings should be looked to. I generally tell my patients, whatever portion of the body the eczema affects, that they are to wash the parts once only every three days, so necessary is it to keep them absolutely dry. More frequent ablution is not necessary—nay, is positively hurtful. These minor details are collectively and individually of great importance, though at first sight they may not seem so. They assist the local treatment to a large degree, and, unless we pay attention to every one, we must expect what in any case is likely to happen—namely, a relapse of the eczema palmaris. The statements under headings 2 and 3 are applicable to all forms of eczema, and whatever their position.

I am, Sirs, yours obediently,

Stokesley, Sept. 1888. J. A. WETHERELL, M.B.

THE PROTECTION OF THE MEDICAL PROFESSION.

To the Editors of THE LANCET.

SIRS,—I think it is decidedly for the profession, as a body, to take steps to protect themselves, as it is perfectly futile to expect the Medical Council to take direct steps on our behalf—that would be altogether out of their sphere; they may help and direct, but I do not see how they can go beyond that. Of one thing, however, I feel sure; and that is, that THE LANCET at least will render a very ready and helping hand, as in my experience it has always done, to any really good cause. Now as to the question what is to be done, and how best to do it. I think the onus lies on the rank and file of the profession to take action, for if some joint and hearty action is not taken, we had better let things remain as they are, and be content to grin and bear it. I myself have had now over a quarter of a century's hard work in the profession, and I have only to look back and contrast the present state of the profession with its state twenty or thirty years ago to see how it has fallen in status. Acts are now unblushingly done which no gentleman would have dared to do in former times. Further, we see, owing to the unnecessary competition, the beneficent influence of sanitary science, and other causes, our emoluments gradually year by year getting less, while every day numbers beyond the real wants of the public are crowding into the profession, and so reducing incomes to a starvation point. I could bring forward endless grievances and abuses as they now exist, but it is out of the question to ask you for space for that—that can be better done by and by. I will, however, do this: if any reasonable number of the profession will help me, I will try to establish a league to bring about a more healthy state of affairs, so that we may happily become again a body respected and remunerated as we once were—a state of matters that will be for the joint benefit of us as a profession and of the public at large.—Yours truly,

September, 1888. J. H.

PULMONARY TUBERCULOSIS.

To the Editors of THE LANCET.

SIRS,—Your leaders in to-day's issue on tuberculosis and inhalations are refreshing. Tuberculosis is not a contagious disease—at least in the same way that syphilis or typhus is contagious. A man in good physical health cannot contract tuberculosis. This disease arises when every possibility of contagion is excluded. A diligence driver died of phthisis at Wiesen. There was no history of phthisis in his case, and there had been no death from this disease in the village for years before. An insanitary dwelling-house, indiscretions, and more bad native wine than wholesome food caused his disease. We all know instances of phthisis in country patients where contagion was impossible. The friends of the phthisical in the large Swiss Kursaals do not contract phthisis, and during winter about nineteen hours of the twenty-four are spent in-doors. We send a patient in the early stage of phthisis to Davos or Wiesen. His sputa are full of bacilli. He takes no physic, uses no inhalations, but lives well, and exercises freely. He returns after several months completely restored in health, and there are no bacilli in his sputa, if there be even any sputa. Bacilli come on the scene during an abnormal constitutional state, and they disappear on the return of the normal condition of health. Where is the evidence that the bacilli cause the phthisis? We do not require guinea-pigs in the debate. We have the disease in man plentiful enough. *Bacilli are present when phthisis is active.* This is the sum of our knowledge of these organisms. If we cremate all the phthisical animals in the world, there is no reason why phthisis should not go on afterwards, as it does now.

Koch would have us all bacteriologists. Verneuil holds that inoculation would be better, and suggests that we should all keep a supply of guinea-pigs for the purpose. Perhaps the bacilli scare is best treated by ridicule, and to arm each of us with a microscope and some guinea-pigs, as the Frenchman advises, is a distinct step in this direction. Rectal injection of sulphuretted hydrogen is another. If anyone will charge a chamber of air impregnated with bacilli, I shall breathe it as long as he likes. I sent you a paper several days before the Glasgow meeting in which I repudiated inhalations in phthisis, and I am pleased to be supported by authorities like Williams, Lindsay, and Denison. I do not think you are warranted in thinking Listerism a success. Lister attacks the germs. Lawson Tait would remove or change the pabulum on which they feed. In my experience Tait's teaching is right in surgery, no less than in medicine.

I am, Sirs, yours obediently,

Southport, Sept. 1st, 1888. JOHN LOWE.

MEDICAL EDUCATION IN FORMER DAYS.

To the Editors of THE LANCET.

SIRS,—The pages of THE LANCET will soon be replete with accounts of the present state of medical education, and advice as to how it should be conducted. Could you find room for some account of medical education a century ago, copied from manuscripts in my possession? They were written in reply to inquiries from St. George's Hospital in 1792, when a controversy on this subject had arisen between John Hunter and his colleagues. With your leave I will forward the Report from St. George's Hospital on this subject later on. I have copied the manuscripts without any change, orthographically or otherwise, as they show the style of writing at that time.

I am, Sirs, your obedient servant,

Sept. 19th, 1888. CHARLES HAWKINS.

"Hatton-garden, Dec. 29th, 1792.

"DEAR SIR,—When I first became acquainted with the two hospitals of St. Thomas and of Guy, which was in December, 1734, the established rules of those hospitals at that time were that each surgeon was per-

mitted to receive four pupils and four dressers at a time, inclusive of apprentices. For instance, if a surgeon had one apprentice only, in such case he, the surgeon, might take three dressers; if he had two apprentices, two dressers only; if he had three apprentices, one dresser only; if he had not any apprentice, he might take four dressers. No apprentice or dresser was ever known to pay a pupil fee. The names of the pupils were, upon their admission, entered in a book at the steward's office; and it was expected that every pupil should bring with him a certificate from his late master, signifying that he, the pupil, had served five years with diligence and sobriety. If any pupil or dresser conducts himself improperly during his attendance upon the business of the hospital, such pupil or dresser renders himself liable to be reproved or even expelled by the treasurer, according to the nature of the crime. Until of late years it was not customary to enter the names of the apprentices or dressers at the steward's office; but now it is. For many years past the pupil money has been and is still equally divided betwixt the six surgeons and the two apothecarys of both hospitals, but previously to this each apothecary was limited to three pupils only.—N.B. All the money received from apprentices and dressers is the whole and sole property of the surgeon, or surgeons, with whom such apprentices and dressers are entered at the steward's office of the respective hospitals. The number of pupils at these hospitals has for many years past been unlimited, but the number of apprentices and dressers is not unlimited. These rules and orders are made and ratified by a Grand Court of Committee of the Governors of the Hospitals, and are liable to be altered by them at pleasure. It is with pleasure I now comply with your request, and with respectful compliments to yourself and to every part of your family,

"Dear Sir, your most obedient and very humble servant,

"JOSEPH WARNER.

"To John Gunning, Esq., Old Burlington-street."

"SURGEONS.

"Mr. Guy's Hospital, being modelled from St. Thomas's, differs very little in discipline. Each surgeon sees the whole number of his patients once a week, when he presents out those who are cured, and gives directions for the rest. Particular bad cases are seen every day if necessary, because, by a rotation, one surgeon at least visits the hospital every day. On Saturday, the physicians and surgeons all meet and go in pairs to visit all their patients. The hours of business are from 11 to 1 o'clock. There is no house surgeon. One of the dressers is in waiting for a week by rotation to take the care of accidents, and the surgeon of the week is always in readiness to be called on if wanted for an operation. Friday is the general day for operations, and for grand consultations. The physicians nor their pupils have any concern with the surgeons' theatre. Notice of operations is put up in each surgery, and sent to the surgeons only. The hours of attendance at both hospitals are the same.

"SURGEONS' PUPILS.

"Formerly they brought certificates of their apprenticeships, but now they only bring their money. There are customs understood, but no rules; in the case of misconduct, beyond the power of the surgeons, application would be made to the grand committee of governors, who have the power of expulsion. The fees of apprentices and of dressers belong to the surgeon under whom they enter .... When a body is opened to inspect disease, anyone may be present. The time for opening a body is usually early in the morning, or after lecture at noon. All the pupils within a reasonable distance from the hospitals are called to accidents. The pupils are considered as belonging to the hospitals, not to one particular surgeon. The surgeons and physicians are only officers of the hospitals, and receive a salary of £40 per annum. They are never present at courts or committees. The surgeons receive no other monies from the charity, and are amenable to the general court of the governors for their conduct .... The pupils do not bring any certificate, but the gentleman's name with whom they served an apprenticeship, and the place of his abode, is entered in the steward's book at the time of his entry..... They are obliged to submit to the rules that regulate the hospital, and are subject to be expelled for any misbehaviour by the committee .... All the fees for the admission of the apprentices and dressers are the sole property of the gentlemen under whom they enter .... All the profits arising from the admission of pupils are shared equally between the surgeons of St. Thomas's and Guy's Hospitals with the apothecary of each, so that there are eight claimants on each division, which takes place on the first Monday in every alternate month .... The dressers and pupils cannot be admitted for a less term than six months .... On leaving the hospital there is a certificate signed by each surgeon of St. Thomas's and Guy's Hospital, specifying the time for which they entered. In that certificate, the word diligently is expressed, which, I think, should be omitted, and a blank left for the surgeon to fill up if it meets with his approbation. The hand-writing of the surgeon would carry more weight with it, and we should be less liable to advance what was not a fact. .... The dressers pay £50 per annum, or £31 10s. for six months; the pupils 24 guineas per annum, or 18 guineas for six months. The pupil's business is only to look on, and to make such an enquiry as he shall chuse of the surgeon who is then attending. .... There are not many bodies opened for examination; but where we can obtain leave for an inspection it is the business of the surgery man to acquaint the pupils with the intention, and all those that wish may attend. The time for doing it is not by any means fixed, but is generally done after the practice is over, and before the anatomical lecture for that day. .... It is the business of the surgery man to make them acquainted with every accident immediately on its entry, for which he receives 2s. 6d. per quarter. .... They may quit the hospital whenever they please, and return again when they chuse. .... When a pupil enters at either of the hospitals he is considered as belonging to both, and has the same privilege at each. It is the business of the surgeon who attends to give them the best instruction he is able without considering to whom they entered. The apothecary enters the greatest number of them, not for himself, but for the surgeons. .... The surgeons do not receive any gratuity for operations. They find their own instruments, and keep them in good condition. .... They cannot become governors during their attendance as officers. There is not any contribution levied on them. .... There is not any difference in the manner of conducting the business at either hospital. .... At St. Thos. Hospital the days of attendance are Tuesday, Thursday, and Saturday at 11 o'clock. At Guy's Hospital the days are Monday, Wednesday, and Friday, at the same hour. At Guy's we visit the whole house every Monday and Friday. At St. Thos., I believe, every Tuesday and Saturday. The Thursday morning is employed in the admission and discharge of patients with them, and the Wednesday with us. The time in visiting the whole house is nearly one hour and a half. .... There is not any house surgeon at either of the hospitals. .... We have not any fixed days for consultations and operations. If the former should be thought necessary it may be done with us either Monday or Friday, as the physicians should attend at the same time and on the same days. The operations are generally appointed at twelve o'clock on one of those days that is usual to see the whole house. If there should be any case that requires an operation which would be more conveniently performed at any other time of day than the Monday or Friday, it is always done by giving a notice. .... When any operation is to be performed the day is fixed that is most agreeable to the surgeons, and notice is stuck up at the surgery of each hospital mentioning the operation and by whom performed. There is not any notice given to the physicians, and it rarely happens that you see a physician in the theatre at the time. When any accident is brought in, the surgeon whose week it is receives notice, and according to the nature of such accident he either goes immediately over, or trusts the management of it to the dresser who is waiting there. .... The hours of attendance are the same, but the days being different it gives the pupils the opportunity of attending every surgeon at each hospital. There have been lectures read in anatomy in which observations in surgery has ever been introduced from the begining, first by Mr. Girl, then Mr. Sharp, Mr. Warner, Mr. Else, and at present by Mr. Cline. The fee for these lectures and for the dissecting room is twelve guineas. There are lectures read every morning at half-past seven on Midwifery by Dr. Lowder in the borough; they continue until half-past eight. At ten o'clock in the morning Mr. Babington, the apothecary at Guy's, gives a lecture on Chymistry, which continues until eleven, when the practice begins. Those mornings that pass without the lecture in Chymistry Dr. Saunders supplys with one on the Practice of Physic. The Chymical lectures continue until there has been two courses given, which employs them from the 1st of October until the month of May. The anatomical lectures are every day from one o'clock until three. These are read at St. Thomas's Theatre by Mr. Cline, the former in Chymistry, and the Practice of Physic at the Theatre at Guy's. All the pupils that enter for the anatomical lectures pay seven guineas; if they chuse to dissect and attend the dissecting-room they pay five guineas extraordinary. The terms for the Chymistry, Materia Medica, and Practice of Physic are ten guineas. I cannot take upon me to say when they were first instituted, but there were lectures read before the year 1750. There are not any Chirurgical lectures given but those that finish each anatomical course by Mr. Cline. They have amounted hitherto to twelve in number to each course. The lectures have always been delivered *viva voce*."

NORTHERN COUNTIES NOTES.

(From our own Correspondent.)

ROYAL ALBERT ASYLUM, LANCASTER.

THE quinquennial festival and opening of the new recreation hall of the Royal Albert Asylum for Idiots and Imbeciles of the Northern Counties, Lancaster, will take place to-day under the presidency of Lord Herschell. The new building, which has been erected from the designs of Messrs. Paley and Austin, combines a suitable and commodious hall for the associated entertainments and a spacious play-room for the use of girls and junior boys in inclement weather. There are 500 children from all parts of the north of England under training, and the committee wish to increase that number to 600. In connexion with the festival there is to be a public banquet.

HARTLEPOOLS.

At the last meeting of the Hartlepool Town Council the resignation of Dr. Morrison of the office of medical officer of health was accepted, and at the same time the hearty thanks of the Council were voted to that gentleman for his past services. At a meeting of the governors of the Hartlepools Hospital, among other donations acknowledged was that of £100 from the workmen of Messrs. W. Gray and Son, being their first quarter-day's pay, and which they have decided to give annually to the hospital. It was stated by Dr. Gourley that the foundation stone of the proposed hospital extension would be laid on the 22nd inst., the structure costing £3500. It may be added that the old historic vicarage has been almost wholly demolished to clear the ground for the extension.

DARLINGTON.

A sad case occurred at Darlington last week, showing the danger of entrusting infants in perambulators to children. An infant fifteen months old was being wheeled by a sister seven years of age, when the girl momentarily left the perambulator to look at a steam roller. A strong gust of wind caused the perambulator to run off the pavement and topple over and strike the legs of a horse which was standing in a corporation water-cart at the edge of the kerbstone. The animal swerved to one side and pulled the cart over the child, causing its instant death. The cart was filled with water and weighed a ton.

IMPURE LARD.

Several successful prosecutions of tradesmen in the north have lately been instituted for selling impure lard. It was shown that in some cases the adulteration consisted of from 25 to 30 per cent. of cottonised oil and beef stearine. The presiding magistrate properly stated that "the production of an analysis from a manufacturer in America was not worth twopence. No doubt the dealers had been taken in, but the poor people must not be taken in likewise."

THE LATE DR. LUKE ARMSTRONG.

It is supposed that the chair of Operative Surgery rendered vacant at the Newcastle College of Medicine by the death of Dr. Luke Armstrong, will not be filled up at present. The surgeoncy at the Royal Infirmary will, however, soon be declared vacant. Messrs. Dodd and Williamson are the assistant surgeons, and have held the posts for several years. A meeting of the professional and other friends of the late Dr. Luke Armstrong has been called at the Royal Infirmary this week to take steps to perpetuate his memory. Most likely it will take the form of a scholarship in comparative pathology, as the subject was one in which, as is well known here, he took much interest.

LEAD POISONING IN NEWCASTLE.

Since my last letter another sad case of fatal lead poisoning has occurred in Newcastle. The patient was a female aged thirty-four, and had worked at a white lead factory for several years, but during the past five years she had frequently suffered from its effects. At last she was seized with convulsive fits, from which she never recovered. The surgeon to the works, Mr. H. W. Newton, at the inquest, deposed that proper respirators were provided by the firm, and also that combs, towels, and baths were provided to ensure cleanliness, so that they need never leave the works with a particle of lead upon them, and also, seeing the importance of the female workers not commencing without a good meal, the firm had offered to liberally subscribe to such a meal, but the *employés* had not responded to the offer, and there was great difficulty in getting them to use the efficient means provided for the purpose. A verdict of "Death from lead poisoning" was recorded. The coroner said he had been informed that the respirator introduced by Mr. Newton was one of the best for minimising the effects of lead. In connexion with the effects of lead on the system, Dr. D. Drummond, of this city, in some papers which he has just collected and printed on peripheral paralysis, has recorded some most interesting cases of lead neuritis observed and treated by him at the Newcastle Royal Infirmary. In one case various organs were found contaminated with lead after death, but the spinal cord had no structural change. While the posterior interosseous and other nerves showed very pronounced morbid changes, the paralysed and healthy muscles showed lead in about the same quantity. Dr. Drummond's papers will repay study.

Newcastle-on-Tyne, Sept. 18th.

DUBLIN.

(From our own Correspondent.)

DUBLIN MEDICAL SCHOOLS AMALGAMATION SCHEME.

ONLY a fortnight now remains before work commences in the various schools, and a good deal has yet to be done before the scheme is an accomplished fact. A special meeting of the Fellows has to be convened to consider the scheme as passed by a majority of the Council, and to adopt it or refer it back to the Council for reconsideration. Many consider that the scheme should have been brought on earlier in the year than it was; some believe the time is now too short to allow it to come into operation this year; while others are of opinion that if not carried now it will never be adopted. Possibly another week will decide definitely the probability of the scheme being adopted this year or not at all.

RICHMOND DISTRICT LUNATIC ASYLUM, DUBLIN.

This institution, containing 1176 patients, is stated by the inspectors of lunatic asylums in their recent report to be overcrowded by nearly 100 inmates, and as the monthly admissions are in excess of the discharges, some new provision is obviously needed. The existing accommodation would be sufficient for its normal population in regard to area and general requirements, such as hospitals, infirmaries, chapels, and refectories; but day-rooms and apartments for the staff are daily becoming more pressing, and should speedily occupy the consideration of the board of governors. Dysentery and some other zymotic affections having been prevalent, large sanitary operations were recently undertaken, not only within and immediately around the buildings, but through a considerable portion of the grounds and adjoining conduits. The cost is estimated at about £9000, a large outlay no doubt, but one which was imperatively demanded.

A SINGULAR CASE.

A medical student named Gannon, who had been subject to delusions for some time, recently removed both his eyes, and has refused to give any explanation of the occurrence. The injured man was removed to the Mater Misericordiæ Hospital, and was placed under the care of Mr. Hayes. In the field where the act was committed were found a blood-stained walking-stick and a piece of wire, both of which were probably utilised to remove the organs, which were found about one hundred yards distant from the place where Gannon was lying down when first discovered.

HEALTH OF IRELAND DURING 1887.

The births last year were 112,400 and the deaths 86,585, both absolutely, and in proportion to the estimated population, being under the annual average of the past ten years. The excess of births over deaths was 23,815, and the loss by emigration amounted to 82,923, thus accounting for a decrease of 59,108 in the population; but against a portion of this decrease there is a set-off in immigration, of which no official record has been obtained. It is a very melancholy fact that the average reduction of the population per year since 1877 has been close upon 40,000. The four highest counties having the highest birth-rates were Antrim, Dublin, Down, and Mayo; and the lowest, Monaghan, Meath, Tyrone, and Longford. The death-rate for 1887 was 18·3, which was slightly under the average rate for the previous decade. A large proportion of the deaths occurred among infants under one year old and of children under five years. The figures relating to pauperism in 1887 are not of a satisfactory nature. The number of in-door poor was 46,442, and of out-door 65,607. This is an increase as compared with 1877, although the population has been sensibly decreased since then. Out-door relief has doubled during the last ten years, while in-door support has increased.

Dublin, Sept. 18th.

BELFAST.

(From our own Correspondent.)

THE ROYAL HOSPITAL.

AT the quarterly meeting held on August 27th, it was reported that during the previous quarter 319 intern patients had been treated in the hospital; of these, 318 were surgical and 201 medical, while during the same period there had been 3067 extern patients. The financial condition is not satisfactory, as at the end of July the balance due was £1233, while at the beginning of the quarter it was £869. The total expenditure for the eleven months ending July 31st was £8016 6*s.* 4*d.* (this including an amount due at the beginning of the year). From three sources—(1) general subscriptions, (2) *employés'* subscriptions, and (3) church collections—there has been a diminution as compared with the same time last year of £207. All the ordinary sources of income have diminished, while the demands made upon the hospital have steadily increased. The general arrangements of the hospital in all its departments are encouraging. Dr. J. W. T. Smith was re-elected physician, and Dr. T. K. Wheeler, surgeon, each for a period of four years.

HOSPITAL SATURDAY.

The annual street collection on behalf of the Royal Hospital took place on the 1st inst., the amount realised being a little over £200, which, considering the claims the hospital has upon the sympathy of the public, and its absolute non-political

and non-sectarian character, is anything but a satisfactory amount, and little creditable to the town of Belfast.

Belfast, Sept. 17th.

PARIS

(From our own Correspondent.)

ACTINOMYCOSIS.

M. NOCARD, the well-known veterinarian, recently brought to the notice of the Academy of Medicine a case of human antinomycosis, the first observed in France. The case was communicated by M. Lucet, veterinary surgeon at Courtenay, and the following is a summary of his note. A young man, a groom, after injuries on the nates and on the thigh of the left side, which took place in the months of March and April, 1887, presented in the left lower limb a species of deep phlegmon, slow in its course, which was incised in the month of July, and again, after the occurrence of new foci, in October and November. The pus obtained, when the first abscess and the subsequent ones were incised, contained a considerable number of small granulations, which, examined by the microscope, were observed to be formed by a cluster of actinomyces. A fistula was formed, from which escaped pus mixed with small white bodies (granulations containing clusters of actinomyces). At the end of July, 1888, the fistula still existed, and under it a new focus was formed; it was at first hard, and then became soft. When opened, this new abscess gave issue to only a little pus, presenting always the same characters as those of the pus which escaped from the opening of the previous abscesses. The patient is better, walks, and does not suffer, but he is not cured.

FILARIASIS.

In a note on this subject, Dr. Lancereaux defines filariasis to be a malady determined in the economy by the presence of the filaria sanguinis, in the same way that trichinosis results from infection by trichinæ. The anatomical disorders caused by the filaria are numerous, and are to be found on the glands and lymphatic vessels in the serous cavities and in the blood. But the symptoms are not in relation with the extent of these disorders, as often the patients do not experience any appreciable derangement of health. There are, however, three symptoms which characterise the malady: soft tumefaction of the inguinal glands, hæmatochyluria and the presence of the filaria in the blood. These three symptoms constitute the diagnosis. Demarquay was the first to bring to notice the presence of the filaria in a tumour of the scrotum. The prognosis is of little gravity, although filariasis is a malady of long duration, and it generally terminates in spontaneous cure, the subjects of it sometimes attaining an advanced age. When death takes place, it is generally due to an inflammatory complication arising from a bad state of the general nutrition. It is a malady of hot climates, and mosquitoes are said to be the agents of transmission of the parasite. The treatment of the malady is very unsatisfactory, as almost every drug has been employed, but without success. In the case under notice Dr. Lancereaux employed hydrotherapy and mercurial inunctions to the seat of the engorged glands of the groin. The patient was cured.

THE TYPHOID EPIDEMIC AT CLERMONT-FERRAND.

About two years ago an epidemic of typhoid fever reigned at Clermont-Ferrand. Dr. Nivet, a distinguished practitioner of the place, forwarded a complete report of the epidemic to the Academy of Medicine. The report, which was drawn up from 500 cases carefully observed, tends to prove that, contrary to the opinion of certain authors, it is not only to the contamination of drinking-water that the propagation of typhoid fever must be attributed. Dr. Nivet admits the frequency of the transmission of the typhoid element; but he believes that the typhoigenic bacillus often penetrates into the healthy organism by the air breathed, notably in the habitations the atmosphere of which is vitiated by overcrowding; and that at other times it is simply transported by persons who have been nursing patients affected with the disease.

PULMONARY TUBERCULOSIS.

In a statistical report relative to the frequency of pulmonary tuberculosis and to its curability, Dr. Vibert, in looking over the register of the necropsies made at the Paris Morgue, was struck with this fact—viz., that in 131 individuals of from twenty-two to fifty-five years of age, having all succumbed to violent deaths or sudden deaths, it was noted that the existence of pulmonary tuberculosis was recognised in twenty-five individuals, in seventeen of whom the malady was in a cretaceous or fibrous state; that is to say, of tubercles cured.

DISINFECTION.

The General Council of the Seine has caused to be placed in each of the cantons of the department movable stoves for the purpose of disinfecting the body and bed linen and other articles that have been used by patients affected with contagious diseases. These will be placed gratuitously at the disposal of the public. The circular draws attention to the fact that none of the material subjected to the process will be deteriorated, as the disinfection is obtained simply by the vapour of water under a pressure of from 108 to 115 degrees. Numerous experiments have shown that this mode of disinfection ensures the destruction of pathogenic germs without injuring the hair, feathers, or the tissues.

Paris, Sept. 18th.

INDIA.

(From a Correspondent.)

TEA IN ASSAM.

THE history of industry in Assam tea last year records steady progress. Some 7000 acres more than in the previous year were in full bearing, and the yield reached the huge figure of 68½ million pounds, being 6¾ million pounds greater than in 1886. It is anticipated that the out-turn during the current year of Indian tea will be 96 millions. The supply would seem to be in excess of the demand, and thus the low rates. The United Kingdom is the chief market. Even with the low rates good profits are made, which fact is explained by tea being turned out now for less than was possible a few years since. The use of machinery of an improved character is now largely extended, with the invariable result that everything is done cheaper, while the freight and cost of transport are less. The fall of the prices is also, in a measure, due to over-production.

CHILDREN'S HOSPITAL: PHARMACOLOGICAL LABORATORY.

There are two worthy objects which at the present moment are advancing their claims upon the sympathy and purse of the Government and the philanthropic and opulent public. These are a hospital for sick children and a pharmacological laboratory in Bombay. In honour of Her Majesty's jubilee, Sir Dinshaw Manockjee Petit has come forward with a munificent donation of a lakh and a quarter (125,000) rupees. I may say that it is now an open secret that the idea of the new children's hospital will soon be realised, and will be called after the donor. The establishment of a pharmacological laboratory has been warmly advocated, and may ere long be an accomplished institution.

A NEW FACTORY ACT FOR BOMBAY.

This, it would seem, is necessitated mainly out of regard for the health and well-being of juveniles employed in the local mills and manufactories. Children have hitherto had to work for nine and ten hours a day, even in the hottest weather, in close steamy atmospheres. Human nature revolts against such an outrage, whereby, even in the cases of adults, strength is exhausted, and digestion is seriously impaired. The evil does not end here, for at twelve years of age a child is legally held to become an adult in India. He or she is then a full-time worker for even thirteen hours out of the twenty-four. A new Factory Act is required, as the mill-owners of Bombay appear to drive their willing horses off their legs.

CHOLERA AMONG COOLIES IN ASSAM.

Mr. Vincent Richards writes some long letters to the Calcutta *Englishman* in vindication of attacks made on him, it would appear, by Mr. De Renzy, when sanitary commissioner of Assam, in respect of the causes of outbreaks of cholera on board the Assam steamers. Mr. Richards enumerates the following as circumstances under which outbreaks occur:—1. When cholera is prevalent either among the people from where the emigrants are obtained

or in the districts through which they pass *en route* to the embarkation stations. 2. Embarkation during certain months when cholera is most rife: these are February, March, April, July, and August. 3. When coolies are principally inhabitants of Chota Nagporee district. 4. The longer the passage and the larger the batches of coolies the greater will the mortality be if they have embarked with the disease among them. 5. The non-inspection and detection of cases. He, differing from Mr. De Renzy, indicates that the diminution of cholera on shipboard of late years is due to the fact that the trips which in years gone by used to occupy twenty-one and twenty-two days, now take only seven. Mr. De Renzy, on the other hand, holds that the diminished prevalence on board these Assam steamers is due to improved water supply. This is discarded by Mr. Richards, who quotes from the report of Sir B. Simpson, sanitary commissioner with the Government of India. This official writes that while coolies, who get filtered water on board, are attacked by cholera, other passengers, for whom there is no such provision, and who draw their water over the side of the vessel from the river Bramaputra and the landing places, which are most polluted, *never get it!* Moreover, crews, who are also "unprotected," are *never attacked!* The italics are mine. Mr. Richards points out that, besides a better water supply, there is need for improved ventilation, larger cubic space, more hospital accommodation for segregation of the cholera sick, and improvement of the dietary scale.

SANITATION OF AHMEDABAD.

This city claims the unenviable position of having the highest death-rate of any civilised city in the world. Last year the ratio was 36·36 per 1000, and in 1885 it was 50·85 per 1000. About two months since the Government of Bombay, observing the masterly inactivity which characterised the municipality, administered a sharp rebuke, and warned them that if they did not look after sanitary matters better their constitution would be suspended.

UNIVERSITY OF BOMBAY.

Mr. J. B. Lyon, M.R.C.S., F.C.S., F.I.C., has been proposed for the office of Dean of the Medical Faculty of the Bombay University.

CONTAGIOUS DISEASES ACTS.

The recent Parliamentary agitation has already resulted in the carrying out of the repeal of this piece of legislation, and the substitution of voluntary examination and treatment of women. This is proving to be a dead letter and a veritable *fiasco*. In not one of the Lock hospitals, I understand, has a single person presented herself for examination, or is likely to do so as long as it remains optional.

Bombay, Aug. 28th.

THE SERVICES.

MADRAS STAFF CORPS.—Surgeon-Major Daniel Robert Thompson, M.D., C.I.E., Madras Medical Establishment (dated May 14th, 1888), has been permitted to retire from the service.

ARMY MEDICAL RESERVE OF OFFICERS.—Surgeon Samuel Parsons Smith, 1st Volunteer Battalion, the Royal Fusiliers (City of London Regiment), to be Surgeon-Major, ranking as Major (dated Sept. 19th, 1888); Acting Surgeon Alexander Duncan Fraser, M.D., 4th Volunteer Battalion, the Princess Louise's (Argyll and Sutherland Highlanders), to be Surgeon, ranking as Captain (dated Sept. 19th, 1888).

ADMIRALTY.—Staff Surgeon St. Lawrence ffrench-Mullen, M.D., has been promoted to the rank of Fleet Surgeon in Her Majesty's Fleet (dated Sept. 7th, 1888).—In accordance with the provisions of Her Majesty's Order in Council of April 1st, 1881, Fleet Surgeons John Thomson Comerford, M.D., and Charles Alexander Lees, M.D., have been placed on the Retired List at their own request, with permission to assume the rank of Deputy Inspector-General of Hospitals and Fleets.

The following appointments have been made:—Mr. James M'Gaw, to be Surgeon and Agent at Killybegs and Tribane (dated Sept. 14th, 1888); Surgeon Francis H. Julyan, to the *Royal Adelaide*, and Surgeon Jeremiah Sugrue, to the *St. Vincent* (both dated July 19th, 1888).

VOLUNTEER CORPS.—*Artillery:* 5th Lancashire: Charles William Dean, Gent., to be Acting Surgeon (dated Sept. 15th, 1888).—*Royal Engineers:* 1st Gloucestershire (the Western Counties): Surgeon S. Smith is granted the honorary rank of Surgeon-Major (dated Sept. 15th, 1888).—*Rifle:* 4th Volunteer Battalion, the Durham Light Infantry: Surgeon and Honorary Surgeon-Major W. C. Blackett resigns his commission; also is permitted to retain his rank, and to continue to wear the uniform of the Battalion on his retirement (dated Sept. 15th, 1888).

Obituary.

SIMONE DE BELLO.

THE quaint old Norman seaport Trani, in Apulia, lately lost an able physician in Dr. de Bello, who reached the venerable age of eighty-one in practising chiefly among the poor of that populous city and neighbourhood. The doctor was of a remarkably fine presence and benevolent address, and of latter years came to resemble, in a way that struck everyone who could make the comparison, the Moses of Michael Angelo in the Eudoxian Basilica. His professional skill did credit to the Neapolitan school of which he was a distinguished graduate, and he was never weary in devising and, as far as he could, effectuating means for making healthier and happier the lives of the people among whom he lived.

A funeral, attended by literally thousands of mourners, chiefly the very poor, attested the place he had won in the hearts of his fellow-citizens, and a monument, for which all, according to their means, subscribed, has just been erected over his grave. The epitaph is from the pen of Giovanni Bovio, the celebrated Neapolitan professor and publicist, whose speech on the second day of the commemoration of the eighth centenary of Bologna University was reckoned one of the most memorable that the occasion evoked. Professor Bovio, himself a native of Trani, is well known as an enthusiastic Mazzinian, and Dr. de Bello's adhesion to the same politico-religious *culte* is pointedly indicated in the inscription:—

MDCCCLXXXVIII.
Fui Simone de Bello,
Medico conscio di mio ministero.
Ai miseri
Intelletto e averi.
Alla patria
Abbandonai me e i miei ultimi anni.
Securo
Entrai nella casa de' morti,
E un popolo piangente
Questa pietra
Pose

Dite dite ai viventi
Che ai moribondi
Scienza stato oro lacrime
Tutto par vano
Tranne il dovere.

(MDCCCLXXXVIII. I was Simon de Bello, physician, conscious of my high calling. To the poor I gave up intellect and worldly means, to my country I devoted myself and my last years. Fearless I entered the house of the dead, and a weeping population erected this stone.—Say say to the living that, to the dying, science, gold, tears, all appear vain, except duty.)

Medical News.

UNIVERSITY OF CAMBRIDGE: SANITARY SCIENCE EXAMINATIONS.—The examination in State Medicine will commence on Tuesday, Oct. 2nd. The names of candidates should be sent to the Registrar of the University on or before Sept. 28th.

MEDICAL MAGISTRATE.—We are pleased to state that Mr. D. B. Balding, F.R.C.S., of Royston, has been placed on the Commission of the Peace for Cambridgeshire. Mr. Balding, whose name must be well known to the profession, has for many years held the office of coroner to the district in which he resides.

THE ROYAL HOSPITAL FOR DISEASES OF THE CHEST, CITY-ROAD.—A grand evening concert in aid of the funds of this hospital was given at Myddelton Hall on Monday last. It was one of a series of efforts now being made by the working men's committee in connexion with the hospital.

MR. H. HARVEY-GEORGE has given a site for the erection of a permanent cottage hospital at Gorleston.

VACCINATION GRANT. — Mr. H. Wickham, of Rufford, Ormskirk, has received the Government grant for efficient vaccination (third time in succession) in his district.

THE Camberwell board of guardians on Monday last, after a prolonged discussion, sanctioned an outlay of £14,000 for erecting the first block of a new infirmary.

SWEATING.—At the last usual monthly meeting of the Liverpool United Trades' Council it was resolved to collect evidence in this district for the purpose of being placed before the Royal Commission of Inquiry as to "Sweating."

COUNTY HOSPITAL, YORK.—The governors have decided to erect additional rooms over the Watt ward, and to appropriate for this purpose the residue and accumulated interest of the legacy left in 1874 by the late Mr. Richard Watt, of Bishop Burton.

A COTTAGE HOSPITAL FOR DUFFTOWN. — Sir George Stephen has announced his intention of building and endowing a cottage hospital in Dufftown for the benefit of the Dufftown and Glenrinnes parishes. For this purpose he has resolved to set aside the sum of £5000.

ENTERIC FEVER IN THE LINLITHGOW DISTRICT.—The epidemic of enteric fever which broke out some time ago appears to show no signs of abatement. Some twenty cases have been reported between the burgh and parish, but only one death has as yet resulted.

THE ANGLESEY INFIRMARY EXTENSION.—The new wing of the Anglesey and Carnarvonshire Infirmary at Bangor was formally opened on Wednesday last. It has been erected by public subscription as a memorial to the late president of the institution, Lord Penrhyn. A medallion of the deceased peer in the principal ward was unveiled by the Dowager Lady Penrhyn.

NO less than fifteen persons are said to have been poisoned at Wetwang, near Driffield, by eating veal. The meat is stated to have been quite fresh, but everyone who partook of it was seized with serious illness, many with colic, sickness, and diarrhœa. Fortunately no deaths have resulted. An inquiry into the matter by the medical officer of health has not resulted in any satisfactory solution of the mystery.

THE NORTH-EASTERN HOSPITAL FOR CHILDREN, HACKNEY-ROAD, E.—The following statement was omitted from our Students' Number:—This hospital contains 55 beds. Last year the number of in-patients was 654, and of out-patients 13,882 new cases. Attendances 52,320. Consulting Physicians: Sir Morell Mackenzie, M.D., Dr. Sansom, and Dr. Cayley. Consulting Surgeons: Mr. J. Hutchinson, F.R.C.S., and Mr. R. J. Godlee, M.S., F.R.C.S. Physicians: Dr. F. C. Turner, Dr. Semple, and Dr. Pasteur. Surgeons: Mr. Waren Tay, F.R.C.S., and Mr. Bilton Pollard, F.R.C.S. Clinical Assistant: Major Greenwood, junr., M.D., L.R.C.P. House Surgeon: Mr. W. Blake. Junior House Surgeon: Mr. E. L. De Chazel. Secretary: Mr. Alfred Nixon. City Office, 27, Clement's-lane, E.C.

THE RIVER IRWELL PURIFICATION.—The representatives of a large number of rural and urban sanitary authorities met the chairman and deputy-chairman of the Manchester Ship Canal Company on Tuesday, to consider the reports received from the various local authorities, and also to discuss what further steps might be taken to give effect to the resolutions passed at a conference of local authorities which was held in Manchester in January last. Lord Egerton reported that sixty-seven of the local authorities were represented at the conference out of the seventy-five invited to attend, and stated what steps had been taken subsequently by those authorities in respect to the disposal of sewage. After some discussion, it was decided —in consequence of no information having been obtained from some of the local authorities invited to attend the conference—that the committee should communicate with those authorities which have not hitherto dealt with their sewage and the pollution of the streams in their districts, urging them to either construct works themselves or take advantage of other undertakings in their vicinity which might be available.

BEQUESTS AND DONATIONS TO HOSPITALS.—The late Mr. Allen Fletcher, of Lord-mayor's-walk, York, has bequeathed £25 each to the York County Hospital and the York Infirmary.—By the will of Mr. John Beale, of Belle Vue, Southsea, legacies are left of £500 each to the London Hospital for Incurables and the Cancer Hospital, London.—A donation of £1000 to the Endowment Fund of the Convalescent Home of the Royal Infirmary, Dundee, has been received by the treasurer from Miss Symers, of St. Helen's, Dundee.—A legacy of £400, bequeathed by the late Mr. Henry Dipnall, of Greenhill, Owslebury, to the Royal Hants County Hospital, has just been paid to that institution.—The treasurer of the Children's Hospital, Pendlebury, has received £40, part of the proceeds of the athletic festival held by the *Old Guard* Theatrical Company at Old Trafford.—A donation of £11 13*s.* 6*d.* from the workmen of the Cheshire Lines Engineering Department, Warrington, has been handed over to the Warrington Infirmary and Dispensary.—£54 (the net amount), collected by a house-to-house canvass at Rastrick for the local charities, has been thus distributed—namely: £44 to the Huddersfield Infirmary, £5 to the Bradford Eye Hospital, and £5 to the Halifax Infirmary.—The London Broderers' Company has granted a donation of ten guineas to the funds of the Consumption Hospital, Brompton.—The late Mr. J. P. C. Starkie, of Ashton Hall, Lancashire, has bequeathed £100 each to the Royal Albert Asylum for Idiots, Lancaster, and the Lancaster Infirmary.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column are invited to forward it to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week for publication in the next number.*

BAIN, D. B., M.D., M.B., C.M. Edin., has been appointed Honorary Assistant Physician, Royal Infirmary, Dundee.

BARFORD, A. M., M.R.C.S., L.R.C.P. Lond., has been appointed Assistant House Surgeon to the Liverpool Northern Hospital, vice V. Milligan, M.B., C.M. Aber., promoted.

BELL, J. A., M.R.C.S., L.S.A., has been appointed Police Surgeon for Rochester, Kent.

CAMPBELL, GEORGE, L.F.P.S. Glasg., has been appointed Medical Officer of the Fifth District, Bridgewater.

CHEVES, J. T., M.R.C.S., L.S.A., has been appointed Medical Officer for the Sixth District of the Liskeard Union.

DAVIES, H. A. B., L.R.C.P. Edin., M.R.C.S., has been appointed Medical Officer of Health, Newton Abbott Rural and Wolborough and Dawlish Union Combined Districts.

DEVONALD, ALFRED, L.R.C.P., L.R.C.S. Edin., has been appointed Medical Officer of the Bonvilston District, Cardiff Union.

GARRETT, J. H., M.B. Durh., has been appointed Resident Medical Officer to the City of London Infectious Diseases Hospital.

GOUGH, H. E., M.R.C.S., has been appointed Assistant Surgeon to the Liverpool Dispensaries.

HUGHES, SAM., M.B., C.M. Edin., M.R.C.S., L.S.A., has been appointed Resident Medical Officer to the New Infectious Hospital, Grafton-street, Liverpool.

JOHNS, W. S., L.R.C.P., L.R.C.S., L.M. Edin., has been reappointed Medical Officer of March, Cambs.

MORTON, WILLIAM J., L.R.C.S. Edin., L.R.C.P. Edin., has been appointed Surgeon to the District Hospital, Queanbeyan, New South Wales, vice Dr. Louis Fitz Patrick, resigned.

MOXON, WILLIAM, L.R.C.P., L.M. Edin., M.R.C.S., has been reappointed Medical Officer of Health for the Matlock and North Darley Union Districts, and Matlock District of the Bakewell Union.

NESBITT, ROBERT, L.K.Q.C.P., L.M., L.R.C.S.I., has been reappointed Medical Officer of Health for the Sutton-in-Ashfield Union District.

NEVINS, ARTHUR E., M.R.C.S., L.R.C.P. and S. Edin., has been appointed House Physician to the Hospital for Women, Soho-square, W., vice G. H. Burford, M.B. Aber., resigned.

PHILLIPS, EDWARD ENGLAND, L.R.C.P., M.R.C.S., L.S.A., J.P. for County of Essex, has been reappointed Medical Officer of Health to the Rochford Rural Sanitary Authority, Essex.

RODGERS, J. H., L.R.C.P., L.R.C.S., Surgeon to Nottingham Friendly Societies, has been appointed Surgeon to the Colar Gold Mines, Mysore, India.

RUSHTON, J. L., M.D. St. And., M.R.C.S., has been reappointed Medical Officer of Health, Macclesfield Rural Sanitary District.

TUCKEY, T. ST. PATRICK, M.B., M.Ch. Dub., has been appointed Medical Officer of Health for the Fowey Port Sanitary District.

WALES, T. G., M.R.C.S., L.S.A., has been reappointed Medical Officer of Health, Downham-Market Union District.

WATKINS, J. W., M.D. Edin., M.R.C.S., L.S.A. Lond., has been reappointed Medical Officer of Health, Newton-in-Makerfield and Haydock Union Districts.

WHYTE, JOHN M., M.A. Edin., M.B. and C.M., M.R.C.S., has been appointed Honorary Pathologist, Royal Infirmary, Dundee.

WILLIAMS, A. F., L.F.P.S., L.M. Glasg., L.S.A. Lond., has been reappointed Medical Officer of Health, Brixworth Rural District.

WISKEN, HENRY, L.R.C.P., L.M. Edin., L.F.P.S. Glasg., has been reappointed Medical Officer of Health for the Borough of Heywood.

Vacancies.

In compliance with the desire of numerous subscribers, it has been decided to resume the publication under this head of brief particulars of the various Vacancies which are announced in our advertising columns. For further information regarding each vacancy reference should be made to the advertisement.

BOROUGH HOSPITAL, Birkenhead.—Junior House Surgeon. Salary £50, with board, lodging, and washing, also fees for certifying infectious cases.

CENTRAL LONDON THROAT AND EAR HOSPITAL, Gray's-inn-road.—Three Clinical Assistants. Six months' attendance on two afternoons a week.

CITY OF LIVERPOOL: CITY HOSPITAL, Parkhill, and CITY HOSPITAL, Grafton-street.—Visiting Physician. Salary at the rate of £100 per annum.

COUNTY ASYLUM, near Dorchester.—Assistant Medical Officer. Salary £120 per annum, with board, washing, &c.

GREAT NORTHERN CENTRAL HOSPITAL, Holloway-road, N.—House Physician. Salary £50 per annum, with board and lodgings in the Hospital. Physician to Out-patients.

GUILD OF S. LUKE, Galeston, Eton-avenue, South Hampstead.—English Churchmen to take charge medically of Mission Stations in Eastern Africa, New Westminster, and North China.

HOSPITAL FOR SICK CHILDREN, Pendlebury.—Night Superintendent. Salary £30, with uniform.

MANCHESTER ROYAL INFIRMARY (Monsall Fever Hospital).—Assistant Medical Officer at Monsall Fever Hospital. Salary £100 per annum, with board and residence.

NORFOLK AND NORWICH HOSPITAL.—Assistant to House Surgeon. Board, lodging, and washing provided, but no salary.

NORTH SHIELDS AND TYNEMOUTH DISPENSARY.—House Surgeon and Dispenser. Salary £130 per annum, with a furnished house, gas, coals, &c.

SALOP INFIRMARY.—Assistant House Surgeon. Board, lodging, and washing.

SOUTH-EASTERN DISPENSARY, Bermondsey.—Medical Practitioner, to attend at the Dispensary every evening. Salary according to work done.

ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN, Leicester-square, W.C.—Assistant Physician.

ST. MARY'S HOSPITAL, Paddington, W.—Medical Superintendent. Salary £150 per annum, with board and residence in the hospital.

STOURBRIDGE DISPENSARY.—House Surgeon and Secretary. Salary £130 a year, with furnished rooms, coals, and gas, and extra allowance for horse hire.

TOWNSHIP OF MANCHESTER.—Assistant Medical Officer at the Workhouse at Crumpsall, near Manchester, and Resident Assistant Medical Officer at the Workhouse Receiving and Casual Wards in New Bridge-street, at a joint salary of £150 per annum, with furnished apartments, fire, light, washing, and attendance.

Births, Marriages, and Deaths.

BIRTHS.

JENNINGS.—On the 18th inst., at 33, Rue Marbeuf, Paris, the wife of Oscar Jennings, M.D., of a daughter.

RUSSELL.—On the 13th inst., at The Firs, Waltham-cross, the wife of John H. Russell, M.R.C.S., L.S.A.Lond., of a daughter.

TURLE.—On the 14th inst., at Cliffe House, Enderby, Leicester, the wife of Arthur Turle, M.R.C.S., of a daughter.

MARRIAGES.

BOWER—RIDER.—On the 18th inst., at Trinity Church, Hampstead, by the Rev. G. F. Head, M.A., Vicar of Christ Church, Hampstead, assisted by the Rev. T. C. Storrs, B.A., Curate of Trinity, David Bower, M.D., of Springfield House, near Bedford, to Marian, daughter of William Rider, of 22, Belsize Park-gardens, Hampstead, N.W.

DAY—BLAXLAND.—On the 11th ult., at St. John's Church, Erith, Donald Douglas Day, F.R.C.S., of Norwich, second son of Archibald Day, of Blackheath, to Henrietta Sarah, youngest daughter of G. Blaxland, of Belvedere, Kent.

GEORGE—BERNARD.—On the 4th inst., at Christ Church, Forest-hill, Kent, Henry George, M.R.C.S., L.R.C.P., second son of C. F. George, M.R.C.S., &c., of Kirton Lindsey, Lincolnshire, to Barbara Mary (Birdie), eldest daughter of William Leigh Bernard, Esq., Barrister-at-law.

MORGAN—EASTWOOD.—On the 12th inst., at Seaford Parish Church, William Pringle Morgan, B.A., M.B., Trinity College, Dublin, Hurdis House, Seaford, to Ethel Mary, second daughter of Wm. Eastwood, Esq., The Crouch, Seaford.

DEATHS.

DAVIES.—On the 14th inst., at his residence, Warrior-square, St. Leonards-on-Sea, suddenly, David Davies, M.D., aged 79.

JOLLIFFE.—On the 13th ult., at Kohat, Punjaub, India, Albert Robert Jolliffe, Surgeon Indian Medical Service, youngest son of John Jolliffe, of Portswood, Southampton, of cholera, aged 26.

ROSS.—On the 11th inst., at Alderney, William Abraham Ross, M.R.C.S., L.R.C.P., only son of the late Rev. Wm. Bathgate Ross, formerly Rector of Alderney, aged 39.

N.B.—A fee of 5s. is charged for the Insertion of Notices of Births, Marriages, and Deaths.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, September 20th, 1888.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Dry Bulb.	Wet Bulb.	Solar Radia in Vacuo.	Maximum Temp. Shade.	Min. Temp	Rainfall.	Remarks at 8.30 A.M.
Sept. 14	30·28	S.E.	59	57	106	71	51	..	Hazy
,, 15	30·18	E.	56	55	98	75	55	..	Foggy
,, 16	30·21	E.	62	56	89	65	54	..	Cloudy
,, 17	30·27	N.E.	57	55	89	64	55	..	Overcast
,, 18	30·29	N.E.	59	55	78	63	54	..	Bright
,, 19	30·31	E.	60	57	114	67	55	..	Overcast
,, 20	30·26	E.	58	56	106	69	52	..	Bright

Notes, Short Comments, & Answers to Correspondents.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.

All communications relating to the editorial business of the journal must be addressed "To the Editors."

Lectures, original articles, and reports should be written on one side only of the paper.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers, not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed to the Sub-Editor.

Letters relating to the publication, sale, and advertising departments of THE LANCET *to be addressed "to the Publisher."*

We cannot undertake to return MSS. not used.

ST. AUGUSTINE AND HIS MEDICAL GUIDE.

THE most celebrated among the ancient Christian fathers relates in his "Confessions" how in Carthage, while yet in early manhood, he was a votary and teacher of rhetoric, and had entered the lists for a theatrical prize. Asked by an astrologer what he would give him to win, Augustine indignantly declined all dealings with the man, but admits that the "mystery" of nativity-casting had great charms for him. Indeed, he might have become an astrologer himself but for the old Vindicianus, whom he calls "the great physician of our time" (*circa* A.D. 375), who had, "with his own pro-consular hand," put the Agonistic garland on the youth's head, and thereafter admitted him to his society—a favour which seems to have been instrumental in saving to the Church one of its most brilliant lights. Vindicianus (who, like Celsus more than three hundred years before, appears to have been a Roman gentleman who acquired a knowledge of medicine through love of an ennobling study, and who practised it, like the great physician and scholar Littré, for its own reward), fascinated the young African with his vivid, lively, and earnest discourse, and on learning that Augustine was devoted to astrology, he gave him the fatherly and kindly advice to shun the pursuit and bestow his care and diligence on objects really worthy of them. Vindicianus had once, by his own confession, taken to nativity-casting, in hopes to make a livelihood by it, and, as he had already made a study of Hippocrates, he had no doubt that he would master the secrets of the spurious science like an easy game; but the nobler claims of the healing art won the day, and he abandoned the profession which thrives by deluding the people for that which lives to keep them in life and health. So in the end Augustine yielded to his medical counsellor, and began the study of Heaven, not in the Chaldean, but in the Christian sense, with results which have left on the world an impress only to be effaced with Christianity itself.

Doubtful.—It is not compulsory on the County Council to appoint a medical officer of health. They may do so if they see fit, and his services may be made, with the consent of a District Council, available in a district of the county; but he would be to all intents and purposes the officer of the District Council, who would still remain the sanitary authority. County Councils will therefore not assume the sanitary administration of the country.

Hopeful.—The Scottish preliminary examination is not accepted by the English universities.

"TOUTING AT HOME AND ABROAD."

To the Editors of THE LANCET.

SIRS,—I beg to forward you a copy of the explanation I have submitted to the President of the Royal College of Physicians, Edinburgh, on the subject of the comments made by you regarding my alleged unprofessional conduct, in your issue of July 14th last, in the hope that you will be good enough to consider my side of the case with your usual impartiality.—I beg to remain, Sirs, yours faithfully,

Bombay, Aug. 7th, 1888. J. MUNDAY, L.R.C.P., &c.

"*To the President and Fellows, Royal College of Physicians, Edinburgh.*

"Bombay, 7th August, 1888.

"GENTLEMEN,—Being a licentiate of your College, and likewise of the Royal College of Surgeons, Edinburgh, I beg to be allowed to submit to you my explanation regarding certain remarks made against my professional character in THE LANCET of the 14th July, 1888, under the heading 'Touting at Home and Abroad; Bombay.'

"Having come to know that there was a good practice to be had in the Bombay Harbour, I therefore commenced practising there in April last. I tried to obtain a share of it by introducing myself to the captains of vessels on their arrival. This seems to have given considerable umbrage to the only other two practitioners in the said harbour (who had monopolised the practice), one of whom is a European, the other a Parsee. To such extent did these gentlemen proceed in their endeavours to prevent me from getting a footing in the practice that they did not hesitate through their agents (runners employed by them to board steamers, &c. outside the harbour) to openly charge me with being a 'quack'; and when I produced my diplomas to refute this charge, they had, I regret to have to state, the hardihood to say that those diplomas belonged to my father, and that I was making a dishonest use of them. This they said to captains in my presence. In consequence of these misrepresentations, several captains who would otherwise have placed themselves and crews under my treatment declined to do so. Having thus failed to obtain a legitimate practice, I asked one of the captains to advise me as to the best course to be taken under the circumstances to counteract the very unprofessional and improper means employed to keep me out of the practice. He advised me: 'Write to the shipowners at home, stating your qualifications and terms; ask them to inform their captains there were no objections to employing you if they wished.' Believing, in my then distressed state of feelings, that this was the best course to take, I, without any more advice, sent 'private letters' (printed) to some of the shipowners, from which extracts have been published in THE LANCET, which has so severely censured me. It never was my intention to advertise myself, well knowing such a course was utterly improper and unprofessional. Nor do I admit that, under the circumstances, writing to shipowners was a breach of professional etiquette. It was the very grave provocation I had received in my honest endeavours to obtain a livelihood that led me to write in a way I should never have done otherwise. And if your honourable Society thinks that I have used words or expressions which are unbecoming in a professional man and a member of your Society, I leave you to consider whether the gross insults heaped upon me by these two gentlemen aforesaid for their own selfish purposes would not be my excuse, especially as I wrote the *private* letter (from which the others were printed) in question in a moment of irritation. As a further proof of my entire *bona fides* in the matter, I may add I sent a copy of the letter (printed) to Sir William Guyer Hunter long before any letter appeared in the *Bombay Gazette* or elsewhere. This gentleman was the Principal of the Bombay College when I passed, and subsequently he was made Surgeon-General of the Bombay Presidency. If I had the least notion I was doing anything improper, I submit to you that I would not have sent a copy of my letter to that gentleman, of such respectability and position in the medical profession.

"Hoping this will convince you of my innocence,

"I am, Gentlemen, yours obediently,

"J. MUNDAY, L.R.C.S., L.R.C.P."

Family Doctor complains severely of the system of prescribing through the columns of a newspaper, and its donations to the different London hospitals. Prescribing in this way, and without reference to the peculiarities of individual cases, cannot be of much use, and may cause great injury. It should be discountenanced by all medical men and by hospitals.

M.D.—We are not acquainted with any trustworthy work on the subject.

"AMBULANCES."

To the Editors of THE LANCET.

SIRS,—Your correspondent, Mr. F. R. Humphreys, would have experienced no difficulty in the removal of his patient if application had been made to John Furley, Esq., hon. manager of the Invalid Transport Corps, St. John's-gate, Clerkenwell. In several instances I have taken this course, and obtained the removal of sick and injured with every satisfaction to all concerned. Skilled attendants and proper apparatus are sent with the ambulances, and the cost is very moderate and fair.

I am, Sirs, yours faithfully,

Sept. 17th, 1888. G. CARRICK STEET, F.R.C.S.

UNITED HOSPITALS ATHLETICS.

To the Editors of THE LANCET.

SIRS,—In the Students' Number of THE LANCET it is stated that the hospital cricket ties were started in 1884, and that Guy's have been victorious on every occasion except one. Will you allow me to correct this? The Cricket Challenge Cup was started in 1882, and won the first two years by King's beating Guy's and Charing-cross. Being a member of the winning team on each occasion, I ought to know. I am glad to see hospital cricket is prospering, as formerly it was not so.

I remain, Sirs, yours truly,

September, 1888. OLD KING'S MAN.

CAVOUR'S ILLNESS AND DEATH.

AT length history possesses a clear and authentic narrative of the fatal illness of the great subalpine Statesman. "Ricordi di Michelangelo Castelli" (Turin: L. ROUX, 1888) is the title of the book from which, for the first time, the medical reader can form an intelligible notion of that illness—its predisposing causes, its nature, and its course. Signor Castelli (perhaps Cavour's most intimate friend) writes that the Count inherited a fine constitution; that he was rather short of stature, of florid complexion, sanguine temperament, and inclining with years to be stout; that he was most vivacious in all his movements, and that when apparently lost in meditation he would suddenly take to rubbing his hands together with almost convulsive energy, after which his brow would clear, his expression grow animated, and his whole appearance become that of one from whom a painful load had just been lifted. In 1847 (when in his thirty-seventh year) he suffered from intestinal inflammation, which affected his head, and sometimes made him delirious; but each recurrent attack of this always yielded to bloodletting. In 1852 a more serious visitation of his malady, treated as usual by venesection, induced his physician, Dr. Tarella, to counsel a radical change in the Count's mode of life, which was one of far too intense and continuous thought on that most exciting of subjects, *la haute politique*. Knowing, however, Cavour's disregard of all medical advice, Dr. Tarella made Signor Castelli the medium of his wholesome admonition, with the effect that the patient gave up political speculation for a time, and betook himself to the Certosa di Pesio in the Maritime Alps. The Count returned in three weeks to Turin an altered man—altered greatly for the better. But next year began the events which he utilised for the consummation of his wonderful policy—"a series of diplomatic feats unparalleled in modern times"—and Dr. Tarella resigned himself with a sigh to the conviction that further advice was useless, and that "presto, un giorno o l'altro, succederebbe qualche disgrazia" (soon, one day or other, a disaster would befal his patient). In June, 1861, when the Count's policy had culminated in the freedom and unity of Italy, all except Venice and Rome, which, however, when ripe, were, thanks to the same prolific policy, to drop like mellowed fruit into the lap of the kingdom, the Count became ill, and a visit to a country house in the mountains above Turin sent him back to town no better. The intestinal inflammation had returned, and a substitute for Dr. Tarella bled him as before. The same night he was delirious, and on Castelli's being admitted to his bedside the Count's symptoms and aspect impressed him gravely. He and the faithful valet did all they could to keep political visitors aloof from the patient, but in vain. On the fourth day of his illness, after five bloodlettings, he appeared calmer, and the momentary, really superficial, improvement was utilised for the holding of a Cabinet Council in the sick chamber! This lasted several hours (Sunday, June 2nd), and was followed by prostration, delirium, and high temperature. A consultation of physicians was thereupon held, and the opinion arrived at was that the malady was "pernicious fever." Drs. Ribert and Maffone ordered large doses of quinine; but the symptoms showed no abatement, while Cavour insisted on being bled from time to time. No physician enjoyed his confidence, and the consultants shrank from the responsibility of opposing his will, all the more that they knew he would take his own way, not theirs. Latterly no outsider was admitted to his bedside but Castelli, and the physicians besought him to keep sponging the Count's head with iced water. The narrative of this faithful friend is too detailed to be even summarised. It represents the dominant feature of the malady to be recurrent delirium, for the treatment of which the patient did not allow himself a chance. His wanderings invariably took a political turn, till early on the morning of June 6th, 1861, he passed away with the word "Italia" on his lips. The last scenes of all—the visit of King Victor Emanuel; the crowds of people of all grades of life in the street; their menaces to the priesthood, which was suspected of reluctance to administer the sacraments to the virtual destroyer of the temporal power; the anxiety of all the European States, manifested in hourly inquiries by telegraph as to the patient's condition; the consternation of the civilised world when the fatal issue was known; the *oraisons funèbres*, among which the noble speech of Lord Palmerston in the British House of Commons was by universal admission the tribute to the deceased most worthy of subject and speaker alike—all are given with powerful effect in Signor Castelli's pages. Medicine, too, has her comments to make on the nature and treatment of the malady, the most baffling features in both being the self-will of the patient and his persistent resort for years to bloodletting when the last thing his overwrought brain could tolerate was depletion! "Tout comprendre," says Madame de Staël in a famous passage, "ce serait tout pardonner"; and Signor Castelli's luminous and impartial pages show how lightly, and yet how unjustly, physicians may be condemned when the disease they had to combat found its most effective ally in the illustrious patient himself.

PECULIAR CASE OF WORMS IN INFANTS.

To the Editors of THE LANCET.

SIRS,—I would be greatly obliged if any of your readers would favour me with the treatment of the following case.

I am attending two brothers, aged respectively thirteen months and two years and six months. The former has never had any previous illness, and has been bottle fed on warm cow's milk and boiling water. About a month ago it was remarked that his diapers were covered with small clusters of eggs of a whitish colour, which in twenty-four hours became white worms about a quarter of an inch long, and gradually increased to half an inch, the colour becoming a kind of dirty fawn. The head is small, continuous with the body, which is covered with small hairs, and which becomes larger from before backwards, terminating abruptly, as if the back part had been cut with a knife. As many as fifty of these worms may be seen wriggling on the child's mattress in the morning. When these worms were first discovered, the child was seized with what resembled cerebro-spinal meningitis, except that the temperature was always normal. It was then observed that he had dropsy of both legs from the knees downwards, with paraplegia. He passes a great quantity of urine, and some having escaped on to the floor under him and become dried was found to contain crystals of sugar. The stools are frequent, about six or eight in twenty-four hours, and of a most offensive, earthy odour; the colour resembles milk; they do not contain any worms. The other child, aged two years and six months, was similarly seized in a modified degree at the same time, and also passes the ova of these parasites by the urethra.

I should be glad to be informed of any book treating on the above, and the means of removing them, also the prognosis, &c.

I am, Sirs, yours faithfully,

September, 1888. BABBIN.

THE BRITISH MEDICAL ASSOCIATION MEETING AT GLASGOW.

MESSRS. BURROUGHS, WELLCOME, & CO. have issued a pleasing souvenir of the recent meeting of the British Medical Association at Glasgow, in the form of a series of photographs of various points of interest in the city. The views are remarkably clear and will deservedly be valued by those who attended the meeting, and who may become possessed of them. A copy of each one of the series will be presented by Messrs. Burroughs, Wellcome, & Co. to any medical man on application.

Mr. J. W. Joshua, L.R.C.P., &c.—It is generally right, and altogether pleasant, when a medical man is called to attend the patient of a neighbour in his unavoidable or holiday absence, to regard his attendance as given in his neighbour's stead and temporarily, and to transfer the patient to his ordinary adviser on his return. We entirely agree with our correspondent on this point. On the other hand, we think he should have called on his neighbour to receive and to make explanations.

A Surgeon has not enclosed his card.

THE WHITECHAPEL MURDERS.

To the Editors of THE LANCET.

SIRS,—Possibly before your next issue the theories as to the sanity or insanity of the perpetrator or perpetrators of the Whitechapel murders will be set at rest. I venture to trespass on your valuable space to express most emphatically my opinion that these murders were committed by some person or persons who were perfectly sane. Some years ago I was consulted as to the state of mind of one Frederick Hunt. This man had murdered his wife and two children. It was proved beyond doubt that the prisoner was on terms of the greatest affection with the victims of his impulse. He had nothing to gain by the act, and he had at the time a balance of over £150 at his bankers. After the deed was done, he attempted suicide by placing his head on the line of a railway, from which position he was rescued by a guard, and immediately given up into the hands of the police. He made no attempt to escape, or to conceal his crime, the details of which he minutely described to the authorities. I had several interviews with him in Horsemonger-lane Gaol, and I had no doubt whatever from symptoms, which it would take too long here to enumerate, that the man was a victim of homicidal impulse. He was tried before Justice Brett at the Croydon Assizes, and found not guilty by the jury, on the ground of insanity. Subsequently, Dr. Orange, of the Broadmoor Asylum, confirmed my diagnosis in a paper he communicated to a medical contemporary on criminal responsibility, in which Hunt's case was described at length.

Now as to the Whitechapel murderer. He was most probably a tranger to his victim, and not bound to her by the ties of blood as was he criminal Hunt. In all probability he was a poor man. The fact hat the jewellery he stole from the woman was false goes for nothing. is not likely that at such a time even an expert would be nice as to hese distinctions. The deed of the first Whitechapel murderer was complicated by a subsequent mutilation of the body of his victim, which was of so barbarous a nature as to make one of our own profession shrink from describing it. And this statement would also apply to the second murderer. It is well known to experts in insanity that although the anticipation of the deed may be long cherished, yet the act itself is sudden, unexpected, uncomplicated by any subsequent mutilation, or attempt to conceal the act, and very frequently followed by some suicidal attempt. As far as we have yet heard, there have been no suicides in Whitechapel lately. And any reader of the daily papers must be well aware how common is this tendency when an insane person has committed a murder.

From these data, imperfect as they must necessarily be, I have no hesitation in giving an opinion that should the Whitechapel murderer or murderers be apprehended, it will be proved that he or they are of perfectly sound mind, that at the time the act was committed they were evidently in want of money, which they imagined could be obtained from the sale of their victims' jewellery, and that if there be any necessity to explain away the mutilation of the corpses, it will be found in the fact that such mutilation was effected with a view to the concealment of the crime, which there is every reason to believe was committed before the murders took place.

I am, Sirs, your obedient servant,

Richmond-terrace, Sept. 16th, 1888. HENRY SUTHERLAND, M.D.

To the Editors of THE LANCET.

SIRS,—Being more or less responsible for the original opinion that the individual who committed the wholesale slaughter in Whitechapel was a lunatic, I beg to trouble you with this communication.

In the interview I had with the officials at Whitehall-place I gathered that this was also their theory. In your issue of the 15th inst. you say, "The theory that the succession of murders which have lately been committed in Whitechapel are the work of a lunatic appears to us to be by no means at present well established." Of course, it is impossible to give a positiveness to the theory unless some more evidence can be established; nevertheless, to my mind the case appears tolerably conclusive. The horrible and revolting details, as stated in the public press, are themselves evidence, not of crimes committed by a responsible individual, but by a fiendish madman. You go on to add that "homicidal mania is generally characterised by one single and fatal act." Having had extensive experience in cases of homicidal insanity, and having been retained in the chief cases during the past twenty years, I speak as an authority on this part of the subject. I cannot agree with your statement. I will give one case which recalls itself to my recollection. A gentleman entered my consulting-room. He took his seat, and, on my asking what it was he complained of, replied, "I have a desire to kill everyone I meet." I then asked him for further illustration of his meaning. He then said: "As I walk along the street, I say to myself as I pass anyone, 'I should like to kill you'; I don't know why at all." Upon my further pressing him on the matter, he jumped up and attempted to seize a weapon from his pocket, and to give me a further, more practicable, and more realistic illustration. I was enabled, however, to frustrate him in this desire. Another case in which I was retained as expert was that of Mr. Richardson, who committed murder at Ramsgate (his homicidal tendency was not confined to one individual) and was tried at Maidstone this year; and there are many others that I could mention. Homicidal lunatics are cunning, deceptive, plausible, and on the surface, to all outward appearance, sane; but there is contained within their innermost nature a dangerous lurking after blood, which, though at times latent, will develop when the opportunity arises. That the murderer the victims in Whitechapel will prove to be such an individual is the belief of

Your obedient servant,

I. FORBES WINSLOW, M.B., LL.M.Camb., D.C.L.Oxon.

Wimpole-street, W., Sept. 19th, 1888.

"OFFICIAL AMENITIES."

To the Editors of THE LANCET.

SIRS,—Every assistant medical officer is indebted to "An Assistant Medical Officer" for his letter in THE LANCET of last week under the above heading. Committees as a rule know absolutely nothing of the assistant medical officers, and are dependent altogether on the superintendent for information respecting them. The time has surely come when assistant medical officers should be placed on a surer and better footing, when their salaries should be in proportion to that of the superintendent, and when they should be, in greater part at all events, directly responsible to the committee; this, now that asylums are vastly increasing in numbers, deserves the consideration of every committee of management. I am, Sirs, yours faithfully,

Sept. 19th, 1888. JUSTICE.

THE RELATION OF POPULATION TO THE BIRTH-RATE.

To the Editors of THE LANCET.

SIRS,—May I suggest that the uncertainty and error which arise from year to year between one census and the next owing to the uncertain change of population in any given town can be to a great extent checked and corrected if the number of births in any week or month is compared with the standard birth-rate of the place or county as ascertained at the last census? The births being absolutely known from week to week, an estimate of the population based upon that would give but a very small error at any time. I am, Sirs, yours truly,

Sept. 13th, 1888. L. M. D.

Senex acidus.—We regret we cannot at the moment give the information desired.

H. R. L. should consult his ordinary medical attent. We do not give advice.

COMMUNICATIONS not noticed in our present number will receive attention in our next.

COMMUNICATIONS, LETTERS, &c., have been received from—Dr. Suckling, Birmingham; Mr. L. Humphry, Cambridge; Mr. Roger Williams, London; Dr. Forbes Winslow, London; Messrs. Peters, Bartsch, and Co., Derby; Dr. Handford, Nottingham; Dr. Sutherland; Mr. Mark Judge, London; Mr. F. Treves, London; Mr. Bamford, Uttoxeter; Mr. G. G. Hamilton, Liverpool; Dr. Schnée, Carlsbad; MM. Muratte et Cie, Constantinople; Mr. J. Macevoy, London; Messrs. Pugh and Phillips, Northampton; Mr. A. M. Sheild, London; Messrs. Bush and Co., London; Mr. A. J. Popert, Southport; Mr. J. Cantlie, Hong Kong; Mr. C. Hawkins, London; Dr. Auld, Glasgow; Mr. Harrison Cripps, London; Dr. W. R. Smith, London; Messrs. Burroughs and Wellcome, London; Dr. H. B. Allen, Melbourne; Mr. Joshua, Great Malvern; Mr. A. Nixon, London; Mr. C. Roland, Barcelona; Mr. H. de Méric, London; Dr. Wetherell, Stokesley; Mr. J. B. Pike; Mr. E. Ady, London; Mr. Marshall, Hastings; Mr. Ducket, Manchester; Mr. Benthall, Southsea; Dr. D. Mowat, London; Dr. McDonald, Dorchester; Mr. S. C. Steet, London; Mr. Hall, London; Mr. Eagar, Lancaster; Dr. Scatliff, Brighton; Dr. Staff, St. Ives; Mr. Hawkins, London; Mr. Daly, Worcester; Mr. Brooke, Birkenhead; Mr. Nance, Norwich; Mr. Macdonald, Manchester; Old King's Man; P. O., Coventry; Doubtful; H. S.; Babbin; J. H.; M. R. C.; Justice; Manchester Royal Infirmary; M.D.; Perplexed; Medicus; Prudentia; Salop Infirmary; A Medical Muser; Senex acidus; Hopeful; Temperance, London; E. S. B., Manchester; B. A., London; Edina, London; D., Newcastle; Surgeon, London; J. M. W. H., London.

LETTERS, *each with enclosure*, are also acknowledged from—Messrs. Lee and Nightingale, Liverpool; Mr. Lee, Leeds; Mr. Sutherland, Fence Houses; Mrs. Howlett, Hove; Mr. Tate, Runsey; Messrs. Battle and Co.; Dr. Ellis, Norfolk; Mr. Crasweller, London; Messrs. Crossley and Co., London; Dr. Reifsnyder, Shanghai; Mr. Corbridge, Rotherham; Mr. Wadekar, Dhar; Mr. Oldham, Liverpool; Mr. Sacker, London; Mr. Oakley, Gloucester; Dr. Moore, London; Mr. Brooks, Salop; Mrs. Jones, Hants; Mr. Partridge, Kent; Messrs. Van Houten and Zoon, Holland; Dr. Brooks, London; Mr. Haywood, Notts; Mr. Ford, Ireland; Mr. Heywood, Manchester; Mr. Wells, London; Mr. Dearden, Yorks; Mr. Wormald, Manchester; Medicus, London; Hope, London; Scot, London; co. Durham, London; Exor; College of Preceptors; Aristos, London; C. J., London; O. T., London; Lady Superintendent, Kent; S. H., Hull; Physician, London; Queen's College, Belfast; Iota, London; A. W. K. M. D., Yarmouth; Nurses' Home, Newcastle; M. S., London; Medicus; Sister-in-Charge, North Wales; Omega, London; Hakim, London; E. H. S., London; G. Z., Bath; Yorkshire, London; Chirurgeon, London; J., Peckham; Q., London; Seafield, Coventry; D. G., London; E. D., London; V. T., London; Matron, London; R. E. D., London; Mens, London; Lady Superintendent, Manchester; L. B. B., London; G., Derby; Fosbery, Bath; H. W., Ipswich; B. B., London; Mona, London; Nurse, Brighton; North, London; L.R.C.P., London; Capricorn; Statim, Kensington; A. R., Kelso; Doctor, London; Milo, Aberdeen; L. C., Yorks; L. M., London.

Berwick Journal, North China Herald, Leigh Chronicle, Hertfordshire Mercury, Herald and Weekly Free Press, Reading Mercury, Gravesend Journal, Isle of Wight Express, Accrington Gazette, Surrey Advertiser, Surrey Times, Windsor and Eton Express, West Cumberland Times, Beverley Recorder, Hastings and St. Leonards News, Louth and North Lincolnshire Advertiser, The Stock Exchange, &c., have been received.

Medical Diary for the ensuing Week.

Monday, September 24.

ROYAL LONDON OPHTHALMIC HOSPITAL, MOORFIELDS.—Operations, 10.30 A.M., and each day at the same hour.
ROYAL WESTMINSTER OPHTHALMIC HOSPITAL.—Operations, 1.30 P.M., and each day at the same hour.
CHELSEA HOSPITAL FOR WOMEN.—Operations, 2.30 P.M.; Thursday, 2.30.
ST. MARK'S HOSPITAL.—Operations, 2 P.M.; Tuesday, 2.30 P.M.
HOSPITAL FOR WOMEN, SOHO-SQUARE.—Operations, 2 P.M., and on Thursday at the same hour.
METROPOLITAN FREE HOSPITAL.—Operations, 2 P.M.
ROYAL ORTHOPÆDIC HOSPITAL.—Operations, 2 P.M.
CENTRAL LONDON OPHTHALMIC HOSPITAL.—Operations, 2 P.M., and each day in the week at the same hour.

Tuesday, September 25.

GUY'S HOSPITAL.—Operations, 1.30 P.M., and on Friday at the same hour. Ophthalmic Operations on Monday at 1.30 and Thursday at 2 P.M.
ST. THOMAS'S HOSPITAL.—Ophthalmic Operations, 4 P.M.; Friday, 2 P.M.
CANCER HOSPITAL, BROMPTON.—Operations, 2.30 P.M.; Saturday, 2.30 P.M.
WESTMINSTER HOSPITAL.—Operations, 2 P.M.
WEST LONDON HOSPITAL.—Operations, 2.30 P.M.
ST. MARY'S HOSPITAL.—Operations, 1.30 P.M. Consultations, Monday, 2.30 P.M. Skin Department, Monday and Thursday, 9.30 A.M.
THE PARKES MUSEUM (74A, Margaret-street, Regent-street, W.).—8 P.M. Dr. George Vivian Poore: General History, Principles, and Methods of Hygiene. (Introductory Lecture.)

Wednesday, September 26.

NATIONAL ORTHOPÆDIC HOSPITAL.—Operations, 10 A.M.
MIDDLESEX HOSPITAL.—Operations, 1 P.M.
ST. BARTHOLOMEW'S HOSPITAL.—Operations, 1.30 P.M.; Saturday same hour. Ophthalmic Operations, Tuesday and Thursday, 1.30 P.M. Surgical Consultations, Thursday, 1.30 P.M.
ST. THOMAS'S HOSPITAL.—Operations, 1.30 P.M.; Saturday, same hour.
LONDON HOSPITAL.—Operations, 2 P.M.; Thursday & Saturday, same hour.
GREAT NORTHERN CENTRAL HOSPITAL.—Operations, 2 P.M.
SAMARITAN FREE HOSPITAL FOR WOMEN AND CHILDREN.—Operations, 2.30 P.M.
UNIVERSITY COLLEGE HOSPITAL.—Operations, 2 P.M.; Saturday, 2 P.M. Skin Department, 1.45 P.M.; Saturday, 9.15 A.M.
ROYAL FREE HOSPITAL.—Operations, 2 P.M., and on Saturday.
KING'S COLLEGE HOSPITAL.—Operations, 3 to 4 P.M.; Friday, 2 P.M.; Saturday, 1 P.M.
CHILDREN'S HOSPITAL, GREAT ORMOND-STREET.—Operations, 9 A.M.; Saturday, same hour.

Thursday, September 27.

ST. GEORGE'S HOSPITAL.—Operations, 1 P.M. Ophthalmic Operations, Friday, 1.30 P.M.
CHARING-CROSS HOSPITAL.—Operations, 2 P.M.

Friday, September 28.

ROYAL SOUTH LONDON OPHTHALMIC HOSPITAL.—Operations, 2 P.M.
THE PARKES MUSEUM (74A, Margaret-street, Regent-street, W.)—8 P.M. Prof. Henry Robinson, M.Inst.C.E.: Drainage and Construction.

Saturday, September 29.

MIDDLESEX HOSPITAL.—Operations, 2 P.M.

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